

Return-Path: <fdc>

Received: by watsun.cc.columbia.edu (5.59/FCB)
id AA17110; Thu, 14 Feb 91 11:46:04 EST

Date: Thu, 14 Feb 91 11:46:03 EST

From: Frank da Cruz <fdc@watsun.cc.columbia.edu>

To: benchoff@groupw.cns.vt.edu (Phil Benchoff)

Subject: Re: Blind users of Kermit-MS

In-Reply-To: Your message of Thu, 14 Feb 91 5:56:41 EST

Cc: Joe Doupnik <JRD@cc.usu.edu>,
Christine M Gianone <cmg@watsun.cc.columbia.edu>

Message-Id: <CMM.0.90.0.666549963.fdc@watsun.cc.columbia.edu>

The fastest way to get Chris's book if you can't find it in your local computer bookstore is to call Digital Press, 1-800-344-4825, and order it (order number EY-C204E-DP). \$29.95, disk included.

Quick summary of features for the disabled:

For the visually impaired (but not blind):

- . SET CURSOR BLOCK for big bright cursor.
- . Kermit works with MODE 40 (40-column screen), used in conjunction with adjustments on the host, like SET TERM /WIDTH=40 or stty cols 80. Terminal mode autowrap works right with 40-column display, etc.

For the blind, who use speaking or braille devices:

- . SET TERMINAL NONE (to let their own DOS- or BIOS-level console drivers take over and to prevent direct writes to screen memory).
- . SET KEY OFF (similar reasons).
- . SET DISPLAY SERIAL (so file transfer display makes sense when spoken)
- . ASKQ (for not echoing passwords when speaking devices attached)
- . SET TERMINAL MARGIN-BELL (like on typewriter)

For the deaf:

- . SET TERMINAL BELL VISUAL (screen flashes when bell arrives)

For the physically impaired:

- . SET TERMINAL NONE (to let their own DOS- or BIOS-level console drivers take over).
- . SET KEY OFF (ditto).
- . Use SET KEY to assign difficult key sequences or combinations to single keystrokes.
- . Define macros to allow complicated sequences of commands to be executing without typing very many characters. Macros can even be assigned to single keys.

Finally, Chris's book has been provided to Computerized Books for the Blind, 33 Corbin Hall, University of Montana, Missoula, MT 59812, phone 406-243-5481. I don't know if they have finished transcribing it onto disk yet.

- Frank

P.S. There has also been some talk of putting TDD (Telecommunications Device for the Deaf) support into Kermit so it can communicate with old-style (5-bit Baudot Teletype) TDDs, but this is a big job and would require a large chunk of time and hence some funding from NIH or similar organization. It's probably not worth the effort, since old-style TDDs are disappearing and there are modems on the market that convert between Baudot and ASCII.

ADVANCED TECHNOLOGY

For the disabled, home is where the future is

State-owned showcase of customized devices for the handicapped promises hope of an independent tomorrow

BY MARYFRAN JOHNSON
CW STAFF

A 19th-century Baltimore toll house that once played host to the horse-and-buggy set is becoming a high-tech living laboratory of home automation for people with disabilities.

Although the outside of Smith's Tavern on Jarrettsville Pike has been restored to its classic 1855 appearance, the now-gutted interior of the historical landmark will reflect the next century rather than the past.

When it finally opens to the public next year, the Toll House Future Home will be a fully automated, computer-driven "intelligent" house loaded with motion detectors, infrared sensors, video cameras and speakers.

"The house will be able to touch, feel and see what's going on around it," said Wilson Rivera, a Westinghouse Co. engineer who manages the project for the Volunteers for Medical Engineering (VME), a nonprofit Baltimore-based organization that adapts technology to assist disabled people.

The state-owned building will be a showcase of products, systems and customized devices that will enable the handicapped to live independently. A personal computer will control all systems in the house through customized software programs.

Curators in residence

Future Home will also be the home of David and Terri Ward, the state-appointed resident curators who have spent \$100,000 of their own funds to renovate the exterior. The interior gadgetry will be supplied by VME members, using low-cost, off-the-shelf electronics married to computer software.

"One of the real problems in selling home automation, and even computers, is there are still numerous people in this country who are intimidated by technology," said David Ward, who is wheelchair-bound after being paralyzed from the neck down in a fall 13 years ago.

In addition to living in what he cheerfully calls "a testbed of technology," Ward will act as master of ceremonies for tours of handicapped people. "We want to set up the environment for them so they get more control over it without having to do anything," he added. "They don't even have to know they're using it."

For people who cannot push a button or flip a switch, a voice command may be used to activate security cam-

eras, turn up the stereo volume or drop the room temperature by a few degrees. The click of an infrared remote controller — similar to the ones used to change TV channels — could turn on the oven, start the coffee maker or fire up the hot tub.

Even the blink of an eye could activate a preprogrammed series of events or "scripts." A "going to bed" script, for example, might turn down the heat, arm the external security cameras and dim the lights.

ious disabled communities. An audio system might need to become a system controlled by visual blinking or touch screen tomorrow."

Behind it all will be "computer brainpower" in the shape of an IBM Personal Computer or compatible clone or an Apple Computer, Inc. Macintosh, depending on which machine is donated to VME.

The house is now being wired with fiber-optic, coaxial and twisted-pair telephone cable to carry signal traffic

chapters nationwide.

The donated home management devices being used are Home Manager, a touch-screen environmental control device from Unity Systems in Redwood, Calif., and Butler-in-a-Box, a voice-recognition device from Mastervoice, Inc. Since Home Manager and Butler-in-a-Box were not intended to function in tandem, the engineers are joining the dedicated processors in the two home management devices with a PC software interface.

Also integral to the functioning of Future Home is a prototype audible recognition intelligent computer, a voice-recognition, voice-synthesis computer designed by another Westinghouse engineer, Herb Otto.

Standards struggle

One complication in creating this "intelligent" house is the ongoing industry battle over which electronics wiring technology will become the home automation standard.

In one corner is Smart House; in the other, the Consumer Electronics (CE) Bus. Both are universal communications protocols that allow consumer electronics, heating and cooling systems, PCs, appliances, security systems and telephones to communicate with one another.

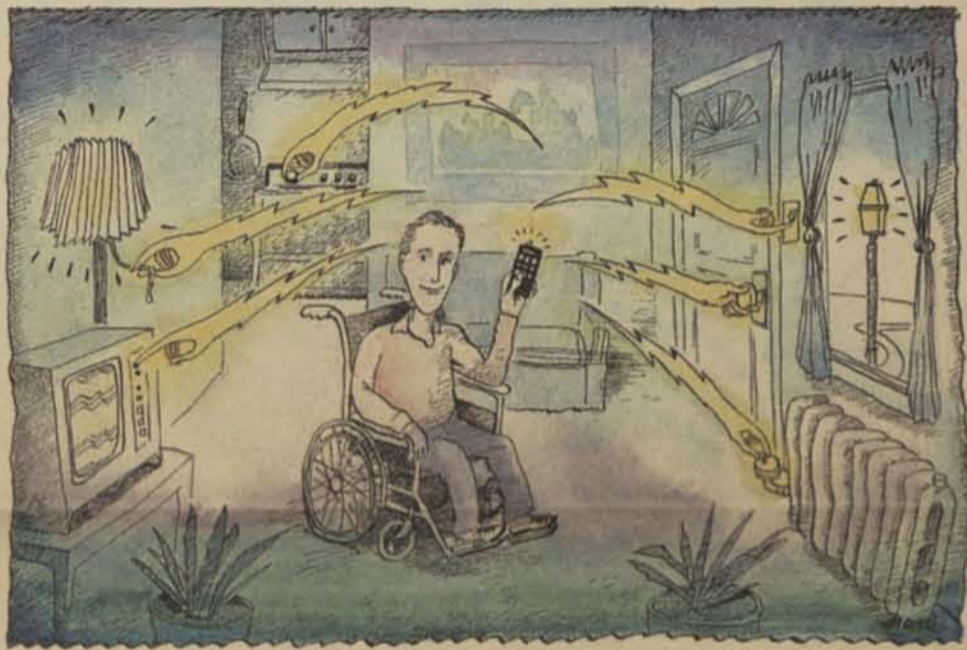
With its first products due in April 1991, Smart House will initially work only for new construction because of the wiring, gas and plumbing systems required. The system has been under development for five years by the Maryland-based Smart House Limited Partnership, a private, wholly owned subsidiary of the National Association of Home Builders.

CE Bus is being developed by the Electronics Industry Association, a nonprofit trade group in Washington, D.C. Eventually, the group will set separate standards for manufacturers of home automation devices covering power line access, command language, coaxial and twisted-pair cable and a "single room" bus that controls infrared and radio signals.

Future Home is being wired only for CE Bus, Ward explained, because acquiring the Smart House technology would have cost the VME at least \$15,000 to wire the house.

"What's holding us up now is, as much as anything, financial. All of our electronics, everything, are being donated by somebody," said Richard Goldman, technical director for Future Home and president of Intellitech, Inc. in Owings Mills, Md.

Eventually, the group hopes to support Future Home through the sale of the home management software or other devices created there.



John S. Dykes

"A lot of technology that able-bodied people use can almost be applied as is for the disabled community," Rivera said. "But David can't use a touch screen because he can't raise his hands. So we have to solve a different human interface problem for him."

By taking existing technologies in "bits and pieces," the VME is designing a system flexible enough to switch-hit from one disability to another, Rivera explained: "We want to make it adaptable to the needs of var-

to and from various appliances and devices. From a lab on the second floor, separated from the Wards' living quarters, the VME engineers will control the home management systems and experiment with newer gadgets as they hit the market.

"We're leaving ourselves open to infuse all sorts of technology later," said John Staehlin, a Westinghouse consulting engineer who founded VME in 1981. Baltimore VME members will share what they learn in running Future Home with 12 VME

Welcoming folks of all trades

The first mistake people make about the Volunteers for Medical Engineering (VME) is thinking that the nonprofit group is comprised only of engineers.

Actually, the organization welcomes the expertise of secretaries, artists, technicians, accountants, mathematicians, lawyers and anyone else whose skills might assist the disabled.

With chapters in 12 states, VME has helped about 500 handicapped or elderly individuals by adapting technology to their needs, said VME President John Staehlin, a Westinghouse Co. consulting engineer who founded the group in 1981.

Two of VME's inventions, available through the organization, are the VME Mobile Standing Frame and the VME Blink Writer.

The standing frame functions as a standing wheel chair for paraplegics, while the blink writer attaches to eye glass frames and allows the user to control computer cursor movement through eye blinks.

The VME can be reached through The Good Samaritan Hospital in Baltimore at 301-532-4360.

Return-Path: <BOSURGI1@applelink.apple.com>
Received: from Sun.COM by watsun.cc.columbia.edu (5.59/FCB)
id AA25736; Mon, 26 Mar 90 20:18:21 EST
Received: from snail.Sun.COM (snail.Corp.Sun.COM) by Sun.COM (4.1/SMI-4.1)
id AA13883; Mon, 26 Mar 90 17:16:43 PST
Received: from noddy.sun.com by snail.Sun.COM (4.1/SMI-4.1)
id AB21008; Mon, 26 Mar 90 17:14:57 PST
Received: from Sun.COM (sun-barr) by noddy.sun.com (4.1/SMI-4.1)
id AA03658; Mon, 26 Mar 90 17:14:48 PST
Received: from apple.com by Sun.COM (4.1/SMI-4.1)
id AB13739; Mon, 26 Mar 90 17:14:29 PST
Received: by apple.com (5.61/25-eef)
id AA04115; Mon, 26 Mar 90 13:25:18 -0800
for
Date: 26 Mar 90 13:10:00 PST
From: BOSURGI1@applelink.apple.com
Message-Id: <9003261310.AA100@DCGQAL.DAS.NET>
To: unicode@Sun.COM
Subject: More on Braille

Dear Unicoders,

I'd like to add a little to Karen's recent message on Braille - but please understand that it's a subject I don't know anything about. Maybe somebody else who does can take this thread up.

In "The Book of a Thousand Tongues", ed. Eugene A. Nida (United Bible Societies, 2nd Ed., 1972, containing capsule descriptions of 1,399 languages into which some portion of the Christian scriptures have been translated), there is a tiny chapter about Braille (pp. 471-473):

"The most important systems used for English are :

BRAILLE, developed in the 1830's by Louis Braille
BOSTON LINE TYPE, devised in the 1830's by Samuel G. Howe
NEW YORK POINT, developed in the late 19th century by William Wait.

Several forms of the 'dot system' were used in the United States in the early part of the 20th century, while Braille had become standard throughout the rest of the English-speaking world. In 1932, the Standard English Braille was adopted by the Workers for the Blind in the United States...for other languages appropriate systems have been devised."

After that, there are a few pages with photos of examples :

English - New York Point
English - Braille
English - "Moon" ("Moon" is not explained, consists of raised letter fragments)

Arabic - "Moon" (letter fragments look "isolated", not contextual)

Chinese (Guoyu) - Braille (!!)
Japanese - Braille (!!)

Spanish - Braille

Observations/Questions :

- There seem to be different national flavors, presumably on a character set basis.
- What is the basis of Sino-Japanese Braille ? The parenthesized indication of "Guoyu" allows me to hope it's phonetic rather than ideographic. The examples in the photos don't look strikingly different from the English ones.

- Whatever "Moon" is, it does look different depending on script (English vs. Arabic), and quite different from any Braille examples. The fragments used for tactile reading are severe, but recognizable, abstractions of the glyphs used for visual reading.
- Would it be possible to adequately address Braille as a font, or even as a special output device? One way of reading the quote in Karen's message from the TC46/SC4 Austrian group, "to explain the relations between Braille and eye readable scripts and to standardize their coding", could be taken to indicate that their goal is to produce a standard mapping between visual and tactile character glyphs (not *necessarily* new character codes).

Could this be adequately handled via a Unicode-character-to-Braille-glyph table at output time? Could this also handle visual representations of the Braille dots included in text for seeing people? This may be hopelessly naive - I have no idea what kind of mapping there is between visual and tactile glyphs in the various Braille systems...

FYI,

Joe Bosurgi
Claris Corporation

AppleLink : BOSURGI1
Internet : Joe_Bosurgi@claris.com

=END=

Corporation for Public Broadcasting
The Annenberg/CPB Project
1111 Sixteenth Street NW
Washington, DC 20036

Nonprofit Organization
U.S. Postage Paid
Washington, D.C.
Permit No. 827

Mr. Frank da Cruz
Manager, Systems Integration
Ctr for Computing Activities
7th Floor Watson Laboratory
Columbia University
612 West 115th Street
New York NY 10025

Guidelines for a
Special Funding Initiative

NEW PATHWAYS TO A DEGREE

Using Technologies to Open the College



The Annenberg/CPB Project

Proposal Deadline: May 15, 1990

The Annenberg/CPB Project was established to make it possible for more people to pursue a baccalaureate-level education by taking advantage of opportunities provided by electronic technologies. Launched in 1981, the Project has received funding of \$10 million a year, provided by The Annenberg Foundation to the Corporation for Public Broadcasting.

To achieve its goal, the Project provides support to develop imaginative, academically rigorous course materials and to explore new applications of information and telecommunication technologies.

To obtain information about the Project's other activities, please write to:

The Annenberg/CPB Project
1111 16th Street N.W.
Washington D.C. 20036

After March 20, 1990 the address will be:

The Annenberg/CPB Project
901 E Street N.W.
Washington D.C. 20004

New Pathways to a Degree: Using Technologies to Open the College

ABSTRACT: Many learners, now part-time students or not enrolled, could work more readily toward a baccalaureate if colleges were to offer more accessible, effective academic programs. The Annenberg/CPB Project announces a special Initiative to help colleges offer such academic programs, building on the opportunities provided by the information and telecommunication technologies.

The Project seeks to fund a diverse set of models at a mix of two- and four-year colleges. These academic programs should have in common:
a) highly accessible courses and services; b) rich resources for learning;
c) opportunities for frequent conversation and exchange between students and faculty; and d) substantial and coherent opportunities to work toward a degree.

The selected colleges will each receive up to \$150,000 (or up to \$300,000 for group proposals) to aid in the development of their own programs. In addition, the Annenberg/CPB Project will provide further funding to support the Initiative as a whole: for collaboration among the colleges, evaluation of the Initiative, and dissemination.

The Challenge

Many learners cannot follow the traditional path to a college degree, typically because of financial pressures that require them to work to support themselves and their families. For others, the degree is difficult to earn because of long distances to the campus, the time constraints of raising a family, or physical impairment. Many people who do enroll in college can only attend as part-time, non-residential students. For them, the path to a degree is long and arduous as they juggle the numerous demands on their time. Still others simply never enroll at all, or try a few courses and drop out.

Opening a college education to these learners has been the chief concern of the Annenberg/CPB Project. To pursue an intellectually challenging education, they need support in four key areas:

1. Access to courses and academic services that are available at convenient times and places;
2. Resources at least comparable to what they would find if they were full-time students on campus -- including stimulating teachers, collections of rich primary and secondary source materials, and laboratory experiences;
3. Opportunities to discuss ideas and exchange homework and other materials with faculty and students;
4. A coherent and substantial array of courses that enables them to move efficiently toward the baccalaureate.

Providing students who cannot regularly come to campus at the normal hours with an education that meets all four of these needs has challenged colleges for many years. Some institutions have worked with enormous commitment to put in place a variety of educational options for such students, including evening classes, week-end colleges, correspondence courses, and television-based courses.

But such programs rarely have met all four needs simultaneously. For example, colleges that use correspondence or telecourse programs have typically found that they can serve learners at convenient times and places, but providing frequent access to communication and discussion with the teacher and other students has been difficult. Now, however, more diverse capabilities are available from technologies that include telephones, fax machines, videocassettes, audiocassettes, personal computers, broadcast and cable television, online databases, audiographic conferencing, and satellite dishes.

The challenge, then, is to provide learners who cannot regularly attend traditional classes with alternative paths to a degree that offer ready access, fine resources, opportunities to communicate, and coherent courses of study.

The Goals of the Initiative

The immediate goal of the Initiative is to help a diverse group of colleges use today's technologies to open academic programs more effectively to students whose schedules, distance, or physical impairment have previously made pursuit of a baccalaureate difficult or impossible.

As partners in this venture, we are seeking institutions that have a history of reaching out to include such learners, and of using technologies for teaching

and learning. The Initiative will provide each funded college¹ with direct financial support over a two-year period, and will forge connections among the key personnel in all of the participating institutions through a combination of face-to-face and computer-mediated meetings.

Each college would extend its reach to learners by:

- providing improved access to one or more significant academic programs. Those programs could range from an array of courses to meet distribution requirements, to a sequence of courses for one or more majors, to a complete academic program actually leading to a degree.
- taking advantage of the capabilities of technologies currently available to them. By using the technologies in effective combinations so that their varied advantages complement each other, the college can provide students both with access to significant intellectual resources and with opportunities to discuss ideas and problems with faculty and other students.
- modifying, as needed, the courses and services of the targeted academic programs in order to take full advantage of the technologies that are used. The goal is an educational experience as intellectually challenging and rewarding for the learner as possible.
- addressing obstacles that are part of the fabric of the institution and higher education, such as policies on faculty development, role definitions and reward structures; budget allocation; and cost accounting.

In the long run, the goal of the Initiative is to stimulate many colleges, in addition to those funded directly, to extend their courses to learners who have difficulty gaining access to traditional classes. To help attain that goal, the Annenberg/CPB Project will select projects from a cross-section of institutions -- 2-year, 4-year, public, private -- in different regions of the country, so that others will be likely to find examples and ideas that are relevant to their situations. The faculty and administrators who participate directly are expected to become a resource for others -- knowledgeable about the needs of learners, the potential of the various technologies, and the politics of institutional change.

By providing direct support to individual colleges, the Project will encourage them to look inward and build on their own strengths. By helping them connect to others with similar interests, it will enable them to look beyond their own special situations to identify common issues and share solutions. Finally, by conducting a thorough evaluation and then disseminating the results of the full

¹ Please note that some proposals may come from a group of colleges. See page 4 for more details. Here, for the sake of simplicity, we will refer to applicants as "the college."

Initiative, the Project expects to extend the results of the Initiative to others with shared interests.

The time seems right to move in this direction. An ever-increasing number of learners needs more accessible academic programs. The technologies offer the needed tools, and are widely available on the campus, in the home, at the worksite, and in the community. Finally, there is growing recognition that the educational obstacles facing off-campus learners are not very different from those of full-time, on-campus students. The same computers, broadcast technologies, and networking systems used to reach students off-campus can also be used to connect all students to new resources and communication opportunities. Thus, a single base of technologies may help simultaneously to open the college to more students and also to more possibilities for learning.

The Annenberg/CPB Project's Contribution

The Annenberg/CPB Project can provide support either to a single college or to a group of colleges.

For proposals from a single college, the Project will provide up to \$150,000 over a two-year period. For a proposal from a group of colleges, funds of up to \$300,000 may be requested. These funds would be used to design and begin implementation of the proposed changes to academic program(s). The program(s) should be fully operational in year three, without further support from the Project.

In addition to this direct support, the Project will encourage collaboration among the institutions selected. Participants will work together in different ways, ranging from sharing information about the technologies to considering the institutional and national policy issues raised by their activities. To support collaboration, the Project will provide additional resources for:

1. participation by three key people (six from group projects) at an annual face-to-face meeting involving all of the projects in the Initiative;
2. access to electronic mail and other means of supporting collaborative work at a distance on topics of special interest to the participants in the Initiative.

To assure that the results of the Initiative are made widely available to the higher education community, the Project will also provide support for:

1. an external evaluation that will analyze developments at the individual colleges and look for patterns and lessons that are useful for others in higher education;
2. a coordinated dissemination effort including presentations at professional meetings, the development of articles for appropriate

publications, special reports on policy issues, and outreach to the higher education and general press.

The College's Contribution

The Initiative will demonstrate what colleges can accomplish by building on existing programs and resources. Therefore, funds from the Annenberg/CPB Project are sufficient to allow applicants to take some risks in advancing their programs, but not to subsidize major new efforts from scratch.

The college will be expected to bring to the effort:

- a record of serving students who have difficulty attending traditional, on-campus classes;
- a strategy that builds on the college's current resources and experience;
- evidence that the key faculty and administrators consider the proposed program(s) a priority;
- a financial commitment during the first two years to complement the Project's resources as well as a commitment to a fully operational program in the third year;
- support of the collaboration with others in the Initiative, and a participation in the dissemination effort;
- active involvement in the evaluation effort. This would include designating an evaluation coordinator who would be one of the college's three representatives to the Initiative's meetings, participating in the design of the evaluation measures, gathering of data, arranging contacts between the external evaluator and students and faculty, and carrying out a local self-study. The college would be expected to provide resources for continued participation in the evaluation during the third year.

Criteria for Assessing Proposals

Proposals will first be evaluated by Project staff and external reviewers who are knowledgeable about higher education and about the telecommunication and information technologies. They will identify proposals which, individually and collectively, can form a nationally influential Initiative. The final funding recommendation will be made by the Annenberg/CPB Project Council at its September 1990 meeting.

In evaluating each proposal, the following areas will receive special attention:

1. The nature of the college's plan for serving learners who have difficulty attending traditional, on-campus classes by offering increased opportunities to work toward a degree. This would include:

- the likely number of students to be served (these could be new students, or currently enrolled students, who will benefit from the newly accessible offerings);
- sensitivity to the student's total costs (taking into account the balance between changes in outlays such as tuition, commuting costs and the costs associated with using the needed technologies, and increases in income from being able to pursue a career while learning);
- attention to the needs of groups in the college's community who are currently underserved and might benefit from more accessible academic programs;
- availability to students of the technologies to be employed, including the college's own facilities and/or those available to them in the community.

2. The design and content of the courses, course sequences, and/or academic programs to be offered. This would include their potential to:

- stimulate and challenge the students;
- form a coherent course of study;
- compare favorably to offerings for students who can regularly attend on-campus courses;
- lead eventually to the baccalaureate; a focus in the liberal arts and sciences is of special interest to the Project, although other fields are also eligible;
- make appropriate use of available technologies to assure that students have access to significant intellectual resources and opportunities for discussion and exchange;
- use available course materials creatively; use of video, audio, and software materials previously funded by the Annenberg/CPB Project is especially encouraged.

3. The institutional support to be provided. This would include:

- relevant experience upon which the proposed effort will build;

- involvement of key faculty and administrators;
 - cost-sharing during the first two years;
 - a commitment to full operation in subsequent years;
 - support for continuing the evaluation during the third year;
 - involvement in collaborative activities with other Initiative colleges, and in disseminating information resulting from the Initiative;
 - adjustments to policies that currently make it difficult to serve the targeted learners.
4. The feasibility of the proposed plan, including:
- the appropriateness of the key personnel for the tasks described;
 - likelihood of effective implementation.
5. The potential of the ideas, experiences, and materials developed in the proposed project to influence other colleges.

Instructions for Preparing A Proposal

The body of the proposal must be limited to 35 pages. Use as a title page the form which can be found following page 15 of these guidelines. In addition, the proposal may include up to 10 pages of appendices, if the extra space is necessary for brief vitae or important background material. **Twenty-two** copies of the full document are required.

The proposal should include the sections listed below, in whatever order seems most appropriate:

1. Students to be served — both those already enrolled and potential students for whom access is currently hindered or blocked. Describe the barriers they currently face, and indicate which would be addressed by the planned effort. Include any indications that the proposed program would be attractive for the students, and discuss how this effort might affect their net costs of pursuing an education. Estimate the number of students to be served annually once the program is in full operation.
2. The courses, course sequences, and/or complete academic programs that have been chosen, and why they have been chosen.

3. The technologies available to the college which will be used in the project. How will the chosen technologies complement one another to maximize their individual advantages and overcome their individual disadvantages? Note especially how a student would use them to communicate with faculty and other students, and to gain access to significant intellectual resources.
4. Proposed content of the courses. Here it would be helpful to describe, in some detail, the content of several courses likely to be offered, indicating the course design, teaching strategies, implications for student learning, existing teaching materials to be used and, if appropriate, any new resources to be developed. Indicate how faculty might shape their courses in order to take advantage of the strengths of the chosen technologies.
5. The support services currently available to serve the targeted learners and, if appropriate, which of them would need to be modified.
6. Relevant institutional history and current status, including the college's experience serving the targeted learners, using the technologies to be employed, and employing innovative techniques for instruction.
7. Institutional commitment to the project, including:
 - involvement of key faculty and administrators;
 - cost-sharing during the two years of funding;
 - commitment to full operation after Annenberg/CPB Project funding ends;
 - support for evaluation in year three;
 - marketing activities to attract students;
 - adjustments to policies that currently make it difficult to serve the targeted learners.
8. Potential for influence on other colleges of the ideas, experiences, and materials developed by the proposed project. Briefly describe developments elsewhere to which this effort could contribute.
9. Commitment to disseminating to others in higher education the results of the college's work and of the Initiative as a whole.
10. Key personnel who would direct and implement the proposed activities. Indicate which people will represent the project at Initiative meetings. Please briefly highlight the skills and experience that make them appropriate for this Initiative.
11. Other information, not specifically requested above, which might be helpful in assessing the proposal.

12. A budget, for the college's resources and those provided by the Annenberg/CPB Project, which covers the two years of direct support and the third year of full operation.

To present the budget, divide it into specific activities such as course planning, faculty development, evaluation, and development of sites. Under each activity, indicate individual cost items such as personnel, travel, and materials. Include time and rates, as appropriate. Please display costs in two columns, one for the funds coming from the college and other sources of support, and one for Annenberg/CPB Project funds. Be sure to identify all sources of support.

13. Provide a timeline with narrative and cash flow for the two years. The Project support need not be evenly divided between the two years of its funding.

Schedule for Submission and Review Decisions

Proposals must be received by the Annenberg/CPB Project by May 15, 1990.

Applicants may find it helpful to discuss ideas with Project staff prior to submitting a proposal. Keep in mind that the closer it gets to the actual submission deadline, the less time there will be for conversation. Early contact is encouraged.

The Project's phone number is 202-955-5256. Just ask for a project officer working on the special Initiative. If you prefer we can call back or communicate via Bitnet.

The address until March 20, 1990 is: The Annenberg/CPB Project, 1111 16th Street N.W., Washington, D.C. 20036. Please note that we are moving on that date to a new address: The Annenberg/CPB Project, 901 E. Street N.W., Washington, D.C. 20004. After March 20th, please call the phone number listed above to learn our new number.

The result of the evaluation will be mailed to each applicant shortly after the Annenberg/CPB Project Council meets on September 27, 1990.

Q & A

◇ **Some of the questions to be addressed in the proposal, such as the likely impact of using the technologies on course content and structure, are difficult to answer at this stage. We would be using the Annenberg/CPB funds to answer some of those questions. How much information do you expect in the proposal?**

It will vary from college to college, depending on the individual stage of development. We appreciate that some planning has yet to occur. We would expect you to offer your best current thinking about what you wish to accomplish.

◇ **You indicate that a group may apply for up to \$300,000. Can a group of three or four colleges apply for the full amount?**

In general, we would expect proposals for \$300,000 to come only from state-wide consortia or other major groups of institutions. Proposals from smaller groups should be proportionately smaller.

◇ **If a group is applying, how can we adequately participate in Initiative meetings and conferences?**

The Project plans to provide support for travel and conferencing for six people from group projects. To assure adequate representation when several colleges are involved, additional support may be needed from the colleges.

◇ **Do a college and its branch campuses count as a single institution?**

A college and its branch campuses or outreach sites would count as one institution. Colleges from the same statewide system would be considered separate institutions.

◇ **What kinds of experience with the targeted learners or technologies do you expect our college to have?**

Our assumption is that a college will have a history of offering courses to students who have difficulty attending traditional on-campus classes, and/or experience with several technologies. Colleges experienced with both elements -- the population to be served and the necessary technological tools -- are likely to be more competitive. The intent is to accelerate an effort that already has a foothold in your college.

◇ Are you expecting colleges to put in place new courses or academic programs, or are you expecting us to extend existing programs to a broader student population?

Most colleges will begin with programs that already exist rather than creating totally new programs. However, we also expect that in the process of using technologies to reach out, the structure of the courses and services will need to be rethought. Using technologies usually opens up new possibilities for teaching.

For example, a computer conference may first be considered as a way of allowing students to participate in class at night. It may then become clear that the same computers used for the conference may also be used to access distant sources of information or to make use of powerful software tools (such as spreadsheets in an economics course). Together these new uses could have an especially positive impact on student learning and retention.

◇ Our college currently has a program in place that uses telecourses to reach off-campus learners. Can we apply if our goal is to improve the quality of the educational experience for those learners, even if we do not know that we will necessarily serve more learners?

Yes, and colleges with experience using telecourses have a fine base on which to build. Even so, you would benefit from considering whether, by virtue of the proposed modifications, the program could attract additional students. If it could, then you should include information in your proposal about how you would promote the modified program to learners.

◇ We have a telecourse program and an academic computing center, each of which wish to submit proposals to the Initiative. Is this appropriate?

An important objective of the Initiative is to encourage colleges to bring together the skilled people on their campuses who now frequently work in isolation. You might consider designing an academic program which builds on the strengths of those two programs. The challenge is to shape seemingly diverse interests into a single, tightly integrated effort.

◇ Can you elaborate on the statement that the quality of the proposed academic program should compare favorably to offerings for students who can regularly attend on-campus classes?

At a minimum, students should be equally well served regardless of where and when they attend class. Credit earned should be the same as that for traditional courses, and not carry any special identification or qualifier on the student's transcript.

We would expect you to consider the possibilities for making the new version of your academic program even more effective for student learning than what has been offered on campus in the past. For example, video, computers and networks can be used to offer opportunities not previously available for campus-bound students.

◇ Do you only want proposals in which the student never has to come to campus?

No, although the efficient use of the student's time is a prime consideration. Students may still need to come to campus for certain classes or laboratories, but it is important to assure that those resources are available at convenient hours.

◇ We are considering incorporating some courses that would reduce but not eliminate the time students must spend on campus. Would that be appropriate for consideration?

Yes. When using the technologies more heavily, the balance of how and where the student spends time naturally shifts. Colleges may want to explore what that means as they seek to serve the targeted students.

◇ How important is it for us to implement an approach to serving the targeted learners that is totally new within higher education?

Novelty for its own sake, technological or otherwise, is not important. We will, however, favor projects whose strategies are likely to be of interest to other colleges like your own.

◇ How many technologies do you expect the college to use? Is there a minimum number?

The technologies are a means to an end. The goal is to reach students at convenient times and locations, offering them access to rich and varied intellectual resources and opportunities for students to communicate with each other and with faculty. To date, most uses of technologies to serve off-campus learners have used one technology at a time. Individually, the technologies have specific benefits and drawbacks. In combination, they can complement each other, overcoming the individual drawbacks. Thus, while there is no minimum number, we do expect that colleges will use combinations of technologies to meet their educational objectives.

◇ Do the technologies have to be at the "cutting edge"? Can they be "old and established"?

Either is fine. What matters is that you have sufficient experience with the technologies individually so that you can focus on using them more effectively in combination to support the academic program.

◇ While some students may have access to computers and modems, others may not. If we plan to use computers and want to open up opportunities for both groups, could we make use of learning centers off campus where students can come at convenient hours to learn?

Certainly. The intention is to open up opportunities using whatever resources are possible. Some colleges may experiment with networks of such sites, located at schools, public libraries, businesses, small outreach sites, or other college campuses. Another approach might be to set up a loan system, so that students can check out a modem or computer for the term of the course.

◇ Must all applicants use computers and modems?

No. There are many combinations of older and newer technologies that can support the full range of teaching and learning. That is why the Initiative will fund a diverse set of projects rather than looking for the one "right answer."

◇ How can I get information about the video, audio, and software previously funded by the Annenberg/CPB Project?

A complete listing can be provided by Project staff.

◇ If a key element of the Initiative is to move students toward a baccalaureate degree, can community colleges apply?

Certainly; we encourage you to apply. Many community colleges are leaders both in reaching out to non-traditional populations of learners and in using technologies creatively. Community colleges could extend their programs in areas relevant to students who anticipate eventually earning the baccalaureate.

◇ You say "baccalaureate." Does that mean we cannot try to serve graduate students? teachers? vocational students? high school students? informal learners?

Your proposal will be evaluated chiefly by its ability to prepare students to earn a baccalaureate. If your college also uses the same base to serve other learners and if that use helps to sustain and expand your program, so much the better.

◇ Are high school students seeking college credit part of the population that you seek to serve?

Yes. However, since we are especially interested in students of traditional college age or older whose work, family or other responsibilities make full-time study on campus difficult, projects are more likely to be competitive if they serve high school students as one of several groups (e.g., along with adults in the community).

◇ Can funds from the Annenberg/CPB Project be used to purchase equipment?

Our expectation is that the bulk of the Project's funds will be used to design and then institutionalize the extension of the courses and programs. If you believe it is essential to spend a modest amount on equipment, you would need to provide justification.

◇ Can your funds be used to hire expert consultants?

Yes. The Project will certainly work with the funded colleges to help identify people with experience in the areas of interest. In addition, we will encourage them to work with the other colleges that are part of the Initiative, since their faculty and administrative teams will undoubtedly have some relevant skills as well. Similarly, we will expect them to share their expertise with colleagues in the Initiative who need their help.

◇ In order for the Annenberg/CPB Project to implement a summative evaluation of the whole Initiative, it will clearly need information from each college after your funds run out. Are you expecting the colleges to provide the needed information in the third year of the effort?

Yes. Part of the evidence of institutional support that we will be looking for is a commitment to provide follow-up data to the third-party evaluator. We will all work together to make sure that the reporting requirements are not onerous.

◇ **What “deliverables” would you expect from us?**

In addition to participation in the evaluation activities as described earlier, we will expect semi-annual descriptions of your activities (including copies of course syllabi and promotional materials) for the first three years, and annual financial accounting for the two funded years.

Other Annenberg/CPB Project Requisites

Applicants must grant to the Annenberg/CPB Project the right to use and duplicate the proposal for evaluation, review and research. The Annenberg/CPB Project is not responsible for loss of or damage to the proposal, or for misuse by any third party. The applicants warrant that the materials sent to the Annenberg/CPB Project do not plagiarize other sources or violate any copyright held by a third person or corporation.

Those receiving funds from the Annenberg/CPB Project must be able to provide the following:

- Financial records as may be reasonably necessary to disclose fully the disposition of such funds, in accordance with generally accepted accounting principles (GAAP).
- Compliance with the nondiscriminatory employment provisions of the Corporation for Public Broadcasting (copies available on request).
- Equal employment opportunity information from organizations with five or more full-time employees.

This summary is not a comprehensive list of the Corporation for Public Broadcasting's contract provisions. The final statement of CPB requirements will be contained in the formal agreement that will be sent to each applicant whose proposal is selected for funding. No other statements or representations will govern the agreement with CPB except the fully signed agreement.

A Final Thought

If you are thinking about applying for the Initiative, please drop us a short note, even a postcard would do, to let us know. Send it to the address inside the cover of these guidelines. The notification is not required; you may submit an application without it. Nor does it commit you in any way. However, if you do contact the Project in advance, it will help us to estimate how many proposals we might receive so that we can better prepare the review process.

Proposal Title Page

Name of Institution(s):

Project Name (if any):

Project Director(s):

Phone number(s) during the academic year and the summer:

Mailing addresses during the academic year and summer:

Electronic mail address regularly monitored:

Project Summary:

Budget Request:

Signature of President or other responsible official

date

Please share these guidelines with others.

If you need more copies, you may duplicate this copy or contact the Annenberg/CPB Project at the following addresses:

Until March 20, 1990:

The Annenberg/CPB Project
1111 16th Street N.W.
Washington D.C. 20036
(202) 955-5256

After March 20, 1990:

The Annenberg/CPB Project
901 E Street N.W.
Washington D.C. 20004

Return-Path: <fdc>
Received: by watsun.cc.columbia.edu (5.59/FCB)
id AA21217; Sat, 27 Jan 90 14:11:32 EST
Date: Sat, 27 Jan 90 14:11:31 EST
From: Frank da Cruz <fdc@watsun.cc.columbia.edu>
To: Joe Doupnik <JRD@cc.usu.edu>
Subject: RE: crazy question
In-Reply-To: Your message of Sat, 27 Jan 90 11:58 MDT
Message-Id: <CMM.0.88.633467491.fdc@watsun.cc.columbia.edu>

TDD = Telecommunication Device for the Deaf. Deaf people use these instead of telephones. It's a Teletype ASR33 (or modern, compact clone of same) with a special modem that modulates Baudot code. Technology goes back to the 1940s. Because of the large installed base, it has so far been next to impossible to phase out Baudot in favor of ASCII, use higher baud rates, etc, and therefore deaf people have been tied to these clunkers for decades.

If MSK can fill the TDD function, then it will provide the transition for deaf people from TDDs to modern technology -- high baud rates, full ASCII (lowercase, even!). A deaf person with TDD-equipped MSK can still communicate with all the other deaf people who have real TDDs, but can also "connect to the electronic world" as Chris would say. Today, a PC clone can be cheaper than a real TDD, so once Kermit does this, nobody would ever need to buy a TDD again.

I think this would be really, really neat. I think the only TDD software available now for PCs is of the low-function, price-gouging variety, and doesn't do anything else -- only the TDD function.

- Frank (actually starting back on C-Kermit today...)

Return-Path: <JRD@cc.usu.edu>
Received: from cc.usu.edu by watsun.cc.columbia.edu (5.59/FCB)
id AA21121; Sat, 27 Jan 90 14:02:54 EST
Message-Id: <9001271902.AA21121@watsun.cc.columbia.edu>
Date: Sat, 27 Jan 90 11:58 MDT
From: Joe Doupnik <JRD@cc.usu.edu>
Subject: RE: crazy question
To: fdc@watsun.cc.columbia.edu
X-Vms-To: IN%"fdc@watsun.cc.columbia.edu"

Frank,

Well, yes. I'd be willing to have a go at baudot, even though I have no idea what a TDD device might be. But we have to learn something new every day. You are correct that the UART is supposed to work with such 5-bit codes, and I can tell the chip to behave that way. Oh, TDD = Talking Device for the ?? No, that doesn't fit either.

Sure, it would be a nice thing to do for people.

Modem friend benchmark report. A person stopped me in the hall yesterday to ask if I'd seen it. Yes, I had and went on to the next msg. More power to him. But it did read rather like a commercial.

Gearing up for the patching exercise..

Joe D.

Return-Path: <fdc>
Received: by watsun.cc.columbia.edu (5.59/FCB)
id AA22088; Sat, 27 Jan 90 15:47:02 EST
Date: Sat, 27 Jan 90 15:47:01 EST
From: Frank da Cruz <fdc@watsun.cc.columbia.edu>
To: RAF@NIHCU.BITNET, crt@helix.nih.gov
Subject: Grant idea
Message-Id: <CMM.0.88.633473221.fdc@watsun.cc.columbia.edu>

Roger, Chuck -- long-time Kermit boosters at NIH... Joe Douppnik and I were thinking of asking NIH for a small grant to buy some TDD (Telecommunications Device for the Deaf) equipment (Baudot modems plus a real, but cheap, TDD system) so we could put TDD support into MS-DOS Kermit. Total cost of this stuff certainly wouldn't be more than about \$5000, and it would be nice too if the grant paid for some number of hours of Joe's time. Do either of you have any idea who at NIH we might approach about this? Or is it the kind of thing that would take years and never get approved anyway, and so therefore not worth the effort?

The benefits of putting TDD support into MS-DOS Kermit should be obvious: deaf PC users would no longer need both a PC and a TDD. Nowadays, PCs tend to be cheaper than TDD terminals anyway, so someone who just became deaf could buy a PC instead of a TDD and save money. As more and more deaf people began to use their PCs for communication, TDD technology would eventually fade away, saving deaf people lots of money and allowing them to use higher baud rates, full-fledged character sets, etc etc.

What do you think? - Frank

Return-Path: <JRD@cc.usu.edu>
Received: from cc.usu.edu by watsun.cc.columbia.edu (5.59/FCB)
id AA26253; Tue, 30 Jan 90 00:19:03 EST
Message-Id: <9001300519.AA26253@watsun.cc.columbia.edu>
Date: Mon, 29 Jan 90 22:14 MDT
From: Joe Douppnik <JRD@cc.usu.edu>
Subject: Re: MSK 3.00 makes it to Moscow
To: fdc@watsun.cc.columbia.edu
X-Vms-To: IN%"fdc@watsun.cc.columbia.edu"

Frank,

TDD stuff. Well, actually you know a heck of a lot more about this stuff than I do so I'd come across as a nearly complete idiot in the area. Maybe you'd better do the talking for a while.

I think the equipment list is fine. No particular reason to have a PS/2 unless we have to do something very peculiar with add-in boards.

Just a couple of points: auto switching between ascii (8) and baudot (5) is certainly doable, but I'd hate to have code like that exposed in a production Kermit (too many things on the wire could trip the latch). BBS is a good idea. But my thoughts here relate to just how much long term commitment could be involved to keep a system on the air and attended. It would be great for your side, budget supplements and all that, but not reasonable for a person in my position.

As I recall, some of the ham radio rtty still used baudot and Heath Kits might have them in electronics.

Here's a problem for the study area: how to send baudot across 8 bit networks. We know the answer: speak ascii, negotiate the encoding method, send baudot wrapped in ascii. Trivial after what we've been through but a morass for those not initiated in the finer points of changing horses gracefully.

Yes, add some of OUR time, plural please because we have to test even if I push some keys. I'm cheap.

I2 and I6. There's still a problem. If a new-Kermit sends I6 then an old Kermit (v3.00, how time flies) will fail unless the attribute is turned off. John's correct that it can be PATCHed on the fly, but the problem remains between corrected and virgin Kermits. I agree that we need to get out of this one FAST!

Finishing the real PATCH file after testing (running it now). If I can I'll add a SEND I6 patch, if it will not cause confusion in the code, but the receiver section might take another day to get a I2==I6 alias.

Now back to work on the patch stuff, and attend to the sundry mailgrams on whatnot. My students have learned that asking questions via Mail is a lot faster than trying to get into my office. I call that progress all around.

Joe D.

30-Jan-90 1:05:24-GMT,2445;000000000011
Return-Path: <JRD@cc.usu.edu>
Received: from cc.usu.edu by watsun.cc.columbia.edu (5.59/FCB)
id AA24460; Mon, 29 Jan 90 20:05:20 EST
Message-Id: <9001300105.AA24460@watsun.cc.columbia.edu>
Date: Mon, 29 Jan 90 18:01 MDT
From: Joe Doupnik <JRD@cc.usu.edu>
Subject: Re: MSK 3.00 makes it to Moscow
To: fdc@watsun.cc.columbia.edu
X-Vms-To: IN%"fdc@watsun.cc.columbia.edu"

Frank,

1. The if test script works great here: 8 GOOD's in echelon down the screen, but only if today's MSVIBM.PCH is applied (else complaint msgs).
2. NIH. Roger found some good advice. We are now well into the FY and most program managers will have funded, or have reserved funds, for their major players. But they also withhold contingency funds. At the NIH level we would have to be at least at the \$40K+ level to get much attention, which means broadening the work to include "study" areas for future developments. Nat Inst of Deafness (or whatever) might provide the small amount of money we want more readily. So, if you concur I'd like to make some phone calls to those indicated in Roger's correspondence, to sound out the prospects, get the rules of the road, get some forms in hand. The price may go up from the \$5K figure you quoted because that becomes too small to be taken seriously. If the NIH full review process is like that at the NSF then a year is the usual time to get back reviewer's comments and prepare a revised proposal.

I'd put the three of us in for a month apiece, plus obtaining one to hopefully two sets of working equipment (TDD stuff), and try to find a natural subject to use as a tester. USU has a handicapped persons program and they might have a local tester; Columbia probably has them by the hundred.

Let me call and then we can plan more finely. But I won't call until getting feedback from you and Chris.

Konstantin: I thought it was a straight forward message, and not really cold at all. And we knew the topic would arise. The solution, for the near time, is to move the TRANSLATION table one step closer to the serial port so detection of C1 controls occurs after the table. Let's say we try this in MSK 3.01. If you concur then I'll tell him the concept and see if he thinks it would be suitable. Meanwhile, he seems to have plenty of troubles getting sliding windows to operate. I'll have to ask him some questions to understand how his experiments were operated. I need his kind of feedback to do a better job.

Joe D.

30-Jan-90 2:02:16-GMT,2493;000000000001
Return-Path: <fdc>
Received: by watsun.cc.columbia.edu (5.59/FCB)
id AA24927; Mon, 29 Jan 90 21:02:10 EST
Date: Mon, 29 Jan 90 21:02:09 EST
From: Frank da Cruz <fdc@watsun.cc.columbia.edu>
To: Joe Doupnik <JRD@cc.usu.edu>
Subject: Re: MSK 3.00 makes it to Moscow
In-Reply-To: Your message of Mon, 29 Jan 90 18:01 MDT
Message-Id: <CMM.0.88.633664929.fdc@watsun.cc.columbia.edu>

TDD proposal... What would be needed?

- . A real TDD system (usually this a hardcopy terminal with a built-in TDD modem). One example is the Memory Printer or Portaprinter from Krown Research Inc (1-800-833-4968) (some names there are Mike Anderson and Stan Sikorsky). These come in various models - some with acoustic modem cups built in, others with direct-connect modem built in. I think these run well under \$1000.
- . A 5-bit Baudot modem (Weitbrecht modulation). I have the names of a few standalone TDD modems, but know nothing about them: Model CM-4 from

Phone-TTY of Hackensack, NJ; the SM-8 from Krown Research; also there's a PC board from Integrated Microcomputer Systems (IMS) in Rockville, MD.

A good way to find out about these devices might be an inquiry to the IBM National Support Center for Persons with Disabilities, 4111 Northside Parkway, Atlanta, GA 30327, (404) 238-3521 (that might be a TDD number) or (800) 426-2133. Come to think of it, they might even be interested in supporting this work in some way, so maybe also...

- . A PC or PS/2 dedicated to this project? If you can think of a reason why there should be one... How about this -- after the development period it could be a dedicated TDD line where people could call & leave messages, etc. Maybe a kind of TDD BBS. (Which might be a good impetus to start putting some BBS-like features into Kermit.)
- . Some of your/our time.
- . Maybe a phone line, even a WATS line?

Some areas of inquiry could be: automatic detection of and switching between ASCII and Baudot for incoming calls on the same line... Setting up a kind of e-mail system within Kermit, so that messages that come in when the user is not around can be recorded -- BBS stuff disguised as answering machine -- hopefully done using beefed-up script tools, with facilities for recalling, deleting, searching for messages, etc. Can think of lots more if pressed.

To pad the budget, maybe one of each of these things for both ends of the project (Logan and NYC).

If you want to start making calls, go ahead! - Frank

30-Jan-90 5:19:06-GMT,2451;000000000001
Return-Path: <JRD@cc.usu.edu>
Received: from cc.usu.edu by watsun.cc.columbia.edu (5.59/FCB)
id AA26253; Tue, 30 Jan 90 00:19:03 EST
Message-Id: <9001300519.AA26253@watsun.cc.columbia.edu>
Date: Mon, 29 Jan 90 22:14 MDT
From: Joe Doupnik <JRD@cc.usu.edu>
Subject: Re: MSK 3.00 makes it to Moscow
To: fdc@watsun.cc.columbia.edu
X-Vms-To: IN%"fdc@watsun.cc.columbia.edu"

Frank,

TDD stuff. Well, actually you know a heck of a lot more about this stuff than I do so I'd come across as a nearly complete idiot in the area. Maybe you'd better do the talking for a while.

I think the equipment list is fine. No particular reason to have a PS/2 unless we have to do something very peculiar with add-in boards.

Just a couple of points: auto switching between ascii (8) and baudot (5) is certainly doable, but I'd hate to have code like that exposed in a production Kermit (too many things on the wire could trip the latch). BBS is a good idea. But my thoughts here relate to just how much long term commitment could be involved to keep a system on the air and attended. It would be great for your side, budget supplements and all that, but not reasonable for a person in my position.

As I recall, some of the ham radio rtty still used baudot and Heath Kits might have them in electronics.

Here's a problem for the study area: how to send baudot across 8 bit networks. We know the answer: speak ascii, negotiate the encoding method, send baudot wrapped in ascii. Trivial after what we've been through but a morass for those not initiated in the finer points of changing horses gracefully.

Yes, add some of OUR time, plural please because we have to test even if I push some keys. I'm cheap.

I2 and I6. There's still a problem. If a new-Kermit sends I6 then

an old Kermit (v3.00, how time flies) will fail unless the attribute is turned off. John's correct that it can be PATCHed on the fly, but the problem remains between corrected and virgin Kermits. I agree that we need to get out of this one FAST!

Finishing the real PATCH file after testing (running it now). If I can I'll add a SEND I6 patch, if it will not cause confusion in the code, but the receiver section might take another day to get a I2==I6 alias.

Now back to work on the patch stuff, and attend to the sundry mailgrams on whatnot. My students have learned that asking questions via Mail is a lot faster than trying to get into my office. I call that progress all around.

Joe D.

Joe -- Looks like we have a couple promising paths to follow on the TDD business. Do you want to start the ball rolling, or should Chris and I do it on this end? - Frank

Date: Sat, 27 Jan 90 15:47:01 EST
From: Frank da Cruz <fdc@watsun.cc.columbia.edu>
To: RAF@NIHCU.BITNET, crt@helix.nih.gov
Subject: Grant idea

Roger, Chuck -- long-time Kermit boosters at NIH... Joe Douppnik and I were thinking of asking NIH for a small grant to buy some TDD (Telecommunications Device for the Deaf) equipment (Baudot modems plus a real, but cheap, TDD system) so we could put TDD support into MS-DOS Kermit. Total cost of this stuff certainly wouldn't be more than about \$5000, and it would be nice too if the grant paid for some number of hours of Joe's time. Do either of you have any idea who at NIH we might approach about this? Or is it the kind of thing that would take years and never get approved anyway, and so therefore not worth the effort?

The benefits of putting TDD support into MS-DOS Kermit should be obvious: deaf PC users would no longer need both a PC and a TDD. Nowadays, PCs tend to be cheaper than TDD terminals anyway, so someone who just became deaf could buy a PC instead of a TDD and save money. As more and more deaf people began to use their PCs for communication, TDD technology would eventually fade away, saving deaf people lots of money and allowing them to use higher baud rates, full-fledged character sets, etc etc.

What do you think? - Frank

To: "Frank da Cruz" <FDC@cunixc.cc.columbia.edu>
From: "Roger Fajman" <RAF@CU.NIH.GOV>
Date: Sun, 28 Jan 90 23:51:47 EST
Subject: Annenburg Proposal

I mentioned your TTD idea to my wife, who works at the University of Maryland. She suggested that you contact these people. They might be able to provide funding much more quickly than NIH.

Date: Sun, 28 Jan 90 23:31:31 EST
From: Jennifer Fajman <FAJMAN@UMDD>
Subject: Annenburg Proposal
To: Roger <raf@nihcu>

Following is mail about the Annenburg Proposals. The information I received on this talks about \$150K-\$300K grants. For something small (in the range of \$5K-\$10K), they might be interested in working it separately. As I remember from previous talks with Annenburg, staff can make small grants without going through the entire proposal evaluation process (this information is over a year old though, so they might have changed). I'd suggest sending mail to Roberts and see what he has to say.

Date: Fri, 26 Jan 90 15:39:58 EST
Sender: Network Site Liaisons <LIAISON@RUTVM1>
From: ROBERTS@UMDC.BITNET
Subject: Annenberg/CPB Initiative to go forward
To: Jennifer Fajman <FAJMAN@UMDD.BITNET>

Annenberg/CPB Project Funding Initiative To Go Forward

The Project seeks proposals from a range of 2- and 4-year colleges and universities that would use technologies to make academic programs more accessible to more types of students.

Priority will be given to projects that can serve individuals who face constraints of schedule, distance, physical impairment, and/or cost. Funds of up to \$150,000 are available for individual colleges, and up to \$300,000 for groups of colleges.

The Initiative, "New Pathways to a Degree: Using Technologies to Open the College," will also help the winning colleges work together on policy issues, evaluation, and dissemination.

As you may have heard, the Annenberg Foundation, which has aided the Annenberg/CPB Project in the past, has indicated its intention to suspend support due to a change in the Foundation's tax status. This change does not affect the Initiative, however, since funds are already in hand to carry out the Initiative and other activities.

If you need a copy of the guidelines, write or call:

The Annenberg/CPB Project
1111 Sixteenth Street NW
Washington, DC 20036
(202) 955-5256

or send electronic mail to ROBERTS@UMDC.BITNET

Remember, the submission deadline is May 15, 1990.

Date: Mon, 29 Jan 90 14:18:33 EST
From: crtbt@helix.NIH.GOV (Chuck Bacon)
To: fdc@watsun.cc.columbia.edu
Subject: Re: Grant idea

Roger says he's sent you mail suggesting the Annenberg foundation. For a grant the size you suggested, they can be on the spot with relatively little ceremony-- call it overhead. Grants from NIH are slow, because the review process is so thorough.

I wonder if the eventual goal shouldn't be to wean the deaf community eventually away from the TDD hardware/software and towards something more common. Where economics raises its head, though, this will be very slow. I don't know the current extent of ASCII incursion into the TDD user community.

To: fdc@watsun.cc.columbia.edu
From: "Roger Fajman" <RAF@CU.NIH.GOV>
Date: Mon, 29 Jan 90 16:06:47 EST
Subject: Re: Grant idea

I asked someone (John Mathis) in DRG (Division of Research Grants) about your idea. Here's his response.

>
> To: M2J
> cc: WKJ, KL2
> From: "Roger Fajman" <RAF>
> Date: Sat, 27 Jan 90 22:48:15 EST
> Subject: Grant idea

>
> This sounds like a good idea, lots of return for not much money. Is
> there any hope that NIH would fund something like this? If so, how do
> they go about it? These are computer people, not medical, so I doubt
> they are familiar with the procedures for applying for an NIH grant.

>
> If it isn't the sort of thing that NIH would fund, where should they go
> to get funding?

>
> Roger Fajman
>

Roger,

Indeed, an intriguing idea! Unfortunately, I know of no "petty cash" way of funding an extramural project like this. The only source is the regular grant application: submission, review and award. The good news is that there is a brand new Institute which is primarily concerned with deafness: the National Institute of Deafness and Other Communicative Disorders. I would suggest that your friends contact Dr. Ralph Naunton, Acting Director of the Division of Extramural Activities, NIDCD (301-496-1804), and discuss their ideas with him. Then, they probably should tackle the grant application writing process.

John

Date: Mon, 29 Jan 90 18:51:51 EST
From: Frank da Cruz <fdc@watsun.cc.columbia.edu>
To: crtbt@helix.NIH.GOV (Chuck Bacon)
Subject: Re: Grant idea

Thanks to you and Roger for the hints about the Annenberg Foundation. Will try to follow through.

> I wonder if the eventual goal shouldn't be to wean the deaf community
> eventually away from the TDD hdwe/sftwe and towards something more common.
> Where economics raises its head, though, this will be very slow. I don't
> know the current extent of ASCII incursion into the TDD user community.
>

Like I may have said, I think the only reason TDDs persist is that so many people have them -- momentum. If you could do TDD communication on a PC with Kermit, there would be no reason for anyone to ever buy a TDD again, because PCs are probably cheaper, and they certainly do a whole bunch of other things that modems don't do, plus they communicate faster, etc. Many deaf people now have both TDDs and PCs, so the testbed is there. Yes, the aim is to give people a tool that will allow them to phase out their use of and dependence on TDDs, and to move ahead to the more "enabling" technologies that have emerged since 1940... - Frank

Return-Path: <crtb@helix.NIH.GOV>
Received: from alw.nih.gov by watsun.cc.columbia.edu (5.59/FCB)
id AA19914; Mon, 29 Jan 90 14:19:32 EST
Received: from helix.nih.gov by alw.nih.gov (5.61/alw-1.1m)
id AA08914; Mon, 29 Jan 90 14:16:12 -0500
Received: by helix.NIH.GOV (5.51/7.0-1)
id AA21156; Mon, 29 Jan 90 14:18:33 EST
Date: Mon, 29 Jan 90 14:18:33 EST
From: crtbt@helix.NIH.GOV (Chuck Bacon)
Message-Id: <9001291918.AA21156@helix.NIH.GOV>
To: fdc@watsun.cc.columbia.edu
Subject: Re: Grant idea

Roger says he's sent you mail suggesting the Annenberg foundation.
For a grant the size you suggested, they can be on the spot with relatively
little ceremony-- call it overhead. Grants from NIH are slow, because
the review process is so thorough.

I wonder if the eventual goal shouldn't be to wean the deaf community
eventually away from the TDD hdwe/sftwe and towards something more common.
Where economics raises its head, though, this will be very slow. I don't
know the current extent of ASCII incursion into the TDD user community.

Return-Path: <RAF@CU.NIH.GOV>
Received: from alw.nih.gov by watsun.cc.columbia.edu (5.59/FCB)
id AA21206; Mon, 29 Jan 90 16:08:08 EST
Received: from cu.nih.gov by alw.nih.gov (5.61/alw-1.1m)
id AA09536; Mon, 29 Jan 90 16:04:43 -0500
Message-Id: <9001292104.AA09536@alw.nih.gov>
To: fdc@watsun.cc.columbia.edu
From: "Roger Fajman" <RAF@CU.NIH.GOV>
Date: Mon, 29 Jan 90 16:06:47 EST
Subject: Re: Grant idea

I asked someone (John Mathis) in DRG (Division of Research Grants) about your idea. Here's his response.

== Forwarded Mail ==

MAIL FROM M2J MONDAY 01/29/90 9:14:57 A.M.

To: RAF, WKJ, KL2
From: M2J
Date: Mon, 29 Jan 90 09:14:57 EST
Subject: Re: Grant idea

> MAIL FROM RAF SATURDAY 01/27/90 10:48:30 P.M.

>
> To: M2J
> cc: WKJ, KL2
> From: "Roger Fajman" <RAF>
> Date: Sat, 27 Jan 90 22:48:15 EST
> Subject: Grant idea

> This sounds like a good idea, lots of return for not much money. Is
> there any hope that NIH would fund something like this? If so, how do
> they go about it? These are computer people, not medical, so I doubt
> they are familiar with the procedures for applying for an NIH grant.

> If it isn't the sort of thing that NIH would fund, where should they go
> to get funding?

> Roger Fajman

> == Forwarded Mail ==

> MAIL VIA BITNET FROM @CUVMB.COLUMBIA.EDU:fdc@watsun.cc.columbia.edu SATURDAY
01/27/90 3:46:51 P.M.

>
> Received: from CUVMB.COLUMBIA.EDU by NIHC (Mailer) id 2574;
> Sat, 27 Jan 90 15:46:51 EST
> Received: from CUVMB by CUVMB.COLUMBIA.EDU (Mailer R2.05) with BSMTTP id 6476;
> Sat, 27 Jan 90 15:45:14 EST
> Received: from watsun.cc.columbia.edu by CUVMB.COLUMBIA.EDU (IBM VM SMTP R1.2.
1)
> with TCP; Sat, 27 Jan 90 15:45:13 EST
> Received: by watsun.cc.columbia.edu (5.59/FCB)
> id AA22088; Sat, 27 Jan 90 15:47:02 EST
> Date: Sat, 27 Jan 90 15:47:01 EST
> From: Frank da Cruz <fdc@watsun.cc.columbia.edu>
> To: RAF@NIHC.BITNET, crt@helix.nih.gov
> Subject: Grant idea
> Message-Id: <CMM.0.88.633473221.fdc@watsun.cc.columbia.edu>

>
> Roger, Chuck -- long-time Kermit boosters at NIH... Joe Douppnik and I were
> thinking of asking NIH for a small grant to buy some TDD (Telecommunications
> Device for the Deaf) equipment (Baudot modems plus a real, but cheap, TDD
> system) so we could put TDD support into MS-DOS Kermit. Total cost of this
> stuff certainly wouldn't be more than about \$5000, and it would be nice too

> if the grant paid for some number of hours of Joe's time. Do either of you
> have any idea who at NIH we might approach about this? Or is it the kind of
> thing that would take years and never get approved anyway, and so therefore
> not worth the effort?
>
> The benefits of putting TDD support into MS-DOS Kermit should be obvious:
> deaf PC users would no longer need both a PC and a TDD. Nowadays, PCs tend
> to be cheaper than TDD terminals anyway, so someone who just became deaf could
> buy a PC instead of a TDD and save money. As more and more deaf people began
> to use their PCs for communication, TDD technology would eventually fade away,
> saving deaf people lots of money and allowing them to use higher baud rates,
> full-fledged character sets, etc etc.
>
> What do you think? - Frank

Roger,

Indeed, an intriguing idea! Unfortunately, I know of no "petty cash" way of funding an extramural project like this. The only source is the regular grant application: submission, review and award. The good news is that there is a brand new Institute which is primarily concerned with deafness: the National Institute of Deafness and Other Communicative Disorders. I would suggest that your friends contact Dr. Ralph Naunton, Acting Director of the Division of Extramural Activities, NIDCD (301-496-1804), and discuss their ideas with him. Then, they probably should tackle the grant application writing process.

John

Return-Path: <fdc>
Received: by watsun.cc.columbia.edu (5.59/FCB)
id AA23617; Mon, 29 Jan 90 18:51:52 EST
Date: Mon, 29 Jan 90 18:51:51 EST
From: Frank da Cruz <fdc@watsun.cc.columbia.edu>
To: crtbt@helix.NIH.GOV (Chuck Bacon)
Subject: Re: Grant idea
In-Reply-To: Your message of Mon, 29 Jan 90 14:18:33 EST
Message-Id: <CMM.0.88.633657111.fdc@watsun.cc.columbia.edu>

Thanks to you and Roger for the hints about the Annenberg Foundation. Will try to follow through.

> I wonder if the eventual goal shouldn't be to wean the deaf community
> eventually away from the TDD hdwe/sftwe and towards something more common.
> Where economics raises its head, though, this will be very slow. I don't
> know the current extent of ASCII incursion into the TDD user community.
>

Like I may have said, I think the only reason TDDs persist is that so many people have them -- momentum. If you could do TDD communication on a PC with Kermit, there would be no reason for anyone to ever buy a TDD again, because PCs are probably cheaper, and they certainly do a whole bunch of other things that modems don't do, plus they communicate faster, etc. Many deaf people now have both TDDs and PCs, so the testbed is there. Yes, the aim is to give people a tool that will allow them to phase out their use of and dependence on TDDs, and to move ahead to the more "enabling" technologies that have emerged since 1940... - Frank

Return-Path: <fdc>
Received: by watsun.cc.columbia.edu (5.59/FCB)
id AA23763; Mon, 29 Jan 90 19:00:26 EST
Date: Mon, 29 Jan 90 19:00:25 EST
From: Frank da Cruz <fdc@watsun.cc.columbia.edu>
To: Joe Doupnik <JRD@cc.usu.edu>
Subject: TDD grant info
Message-Id: <CMM.0.88.633657625.fdc@watsun.cc.columbia.edu>

Joe -- Looks like we have a couple promising paths to follow on the TDD business. Do you want to start the ball rolling, or should Chris and I do it on this end? - Frank

Date: Sat, 27 Jan 90 15:47:01 EST
From: Frank da Cruz <fdc@watsun.cc.columbia.edu>
To: RAF@NIHCU.BITNET, crtb@helix.nih.gov
Subject: Grant idea

Roger, Chuck -- long-time Kermit boosters at NIH... Joe Doupnik and I were thinking of asking NIH for a small grant to buy some TDD (Telecommunications Device for the Deaf) equipment (Baudot modems plus a real, but cheap, TDD system) so we could put TDD support into MS-DOS Kermit. Total cost of this stuff certainly wouldn't be more than about \$5000, and it would be nice too if the grant paid for some number of hours of Joe's time. Do either of you have any idea who at NIH we might approach about this? Or is it the kind of thing that would take years and never get approved anyway, and so therefore not worth the effort?

The benefits of putting TDD support into MS-DOS Kermit should be obvious: deaf PC users would no longer need both a PC and a TDD. Nowadays, PCs tend to be cheaper than TDD terminals anyway, so someone who just became deaf could buy a PC instead of a TDD and save money. As more and more deaf people began to use their PCs for communication, TDD technology would eventually fade away, saving deaf people lots of money and allowing them to use higher baud rates, full-fledged character sets, etc etc.

What do you think? - Frank

To: "Frank da Cruz" <FDC@cunixc.cc.columbia.edu>
From: "Roger Fajman" <RAF@CU.NIH.GOV>
Date: Sun, 28 Jan 90 23:51:47 EST
Subject: Annenburg Proposal

I mentioned your TTD idea to my wife, who works at the University of Maryland. She suggested that you contact these people. They might be able to provide funding much more quickly than NIH.

Date: Sun, 28 Jan 90 23:31:31 EST
From: Jennifer Fajman <FAJMAN@UMDD>
Subject: Annenburg Proposal
To: Roger <raf@nihcu>

Following is mail about the Annenburg Proposals. The information I received on this talks about \$150K-\$300K grants. For something small (in the range of \$5K-\$10K), they might be interested in working it separately. As I remember from previous talks with Annenburg, staff can make small grants without going through the entire proposal evaluation process (this information is over a year old though, so they might have changed). I'd suggest sending mail to Roberts and see what he has to say.

Date: Fri, 26 Jan 90 15:39:58 EST
Sender: Network Site Liaisons <LIAISON@RUTVM1>

From: ROBERTS@UMDC.BITNET
Subject: Annenberg/CPB Initiative to go forward
To: Jennifer Fajman <FAJMAN@UMDD.BITNET>

Annenberg/CPB Project Funding Initiative To Go Forward

The Project seeks proposals from a range of 2- and 4-year colleges and universities that would use technologies to make academic programs more accessible to more types of students. Priority will be given to projects that can serve individuals who face constraints of schedule, distance, physical impairment, and/or cost. Funds of up to \$150,000 are available for individual colleges, and up to \$300,000 for groups of colleges.

The Initiative, "New Pathways to a Degree: Using Technologies to Open the College," will also help the winning colleges work together on policy issues, evaluation, and dissemination.

As you may have heard, the Annenberg Foundation, which has aided the Annenberg/CPB Project in the past, has indicated its intention to suspend support due to a change in the Foundation's tax status. This change does not affect the Initiative, however, since funds are already in hand to carry out the Initiative and other activities.

If you need a copy of the guidelines, write or call:

The Annenberg/CPB Project
1111 Sixteenth Street NW
Washington, DC 20036
(202) 955-5256

or send electronic mail to ROBERTS@UMDC.BITNET

Remember, the submission deadline is May 15, 1990.

Date: Mon, 29 Jan 90 14:18:33 EST
From: crtbt@helix.NIH.GOV (Chuck Bacon)
To: fdc@watsun.cc.columbia.edu
Subject: Re: Grant idea

Roger says he's sent you mail suggesting the Annenberg foundation. For a grant the size you suggested, they can be on the spot with relatively little ceremony-- call it overhead. Grants from NIH are slow, because the review process is so thorough.

I wonder if the eventual goal shouldn't be to wean the deaf community eventually away from the TDD hardware/software and towards something more common. Where economics raises its head, though, this will be very slow. I don't know the current extent of ASCII incursion into the TDD user community.

To: fdc@watsun.cc.columbia.edu
From: "Roger Fajman" <RAF@CU.NIH.GOV>
Date: Mon, 29 Jan 90 16:06:47 EST
Subject: Re: Grant idea

I asked someone (John Mathis) in DRG (Division of Research Grants) about your idea. Here's his response.

>
> To: M2J
> cc: WKJ, KL2
> From: "Roger Fajman" <RAF>
> Date: Sat, 27 Jan 90 22:48:15 EST

> Subject: Grant idea

>

> This sounds like a good idea, lots of return for not much money. Is
> there any hope that NIH would fund something like this? If so, how do
> they go about it? These are computer people, not medical, so I doubt
> they are familiar with the procedures for applying for an NIH grant.

>

> If it isn't the sort of thing that NIH would fund, where should they go
> to get funding?

>

> Roger Fajman

>

Roger,

Indeed, an intriguing idea! Unfortunately, I know of no "petty cash" way of funding an extramural project like this. The only source is the regular grant application: submission, review and award. The good news is that there is a brand new Institute which is primarily concerned with deafness: the National Institute of Deafness and Other Communicative Disorders. I would suggest that your friends contact Dr. Ralph Naunton, Acting Director of the Division of Extramural Activities, NIDCD (301-496-1804), and discuss their ideas with him. Then, they probably should tackle the grant application writing process.

John

Date: Mon, 29 Jan 90 18:51:51 EST
From: Frank da Cruz <fdc@watsun.cc.columbia.edu>
To: crt@helix.NIH.GOV (Chuck Bacon)
Subject: Re: Grant idea

Thanks to you and Roger for the hints about the Annenberg Foundation. Will try to follow through.

> I wonder if the eventual goal shouldn't be to wean the deaf community
> eventually away from the TDD hardware/software and towards something more common.
> Where economics raises its head, though, this will be very slow. I don't
> know the current extent of ASCII incursion into the TDD user community.

>

Like I may have said, I think the only reason TDDs persist is that so many people have them -- momentum. If you could do TDD communication on a PC with Kermit, there would be no reason for anyone to ever buy a TDD again, because PCs are probably cheaper, and they certainly do a whole bunch of other things that modems don't do, plus they communicate faster, etc. Many deaf people now have both TDDs and PCs, so the testbed is there. Yes, the aim is to give people a tool that will allow them to phase out their use of and dependence on TDDs, and to move ahead to the more "enabling" technologies that have emerged since 1940... - Frank

Return-Path: <JRD@cc.usu.edu>
Received: from cc.usu.edu by watsun.cc.columbia.edu (5.59/FCB)
id AA24460; Mon, 29 Jan 90 20:05:20 EST
Message-Id: <9001300105.AA24460@watsun.cc.columbia.edu>
Date: Mon, 29 Jan 90 18:01 MDT
From: Joe Douppnik <JRD@cc.usu.edu>
Subject: Re: MSK 3.00 makes it to Moscow
To: fdc@watsun.cc.columbia.edu
X-Vms-To: IN%"fdc@watsun.cc.columbia.edu"

Frank,

1. The if test script works great here: 8 GOOD's in echelon down the screen, but only if today's MSVIBM.PCH is applied (else complaint msgs).
2. NIH. Roger found some good advice. We are now well into the FY and most program managers will have funded, or have reserved funds, for their major players. But they also withhold contingency funds. At the NIH level we would have to be at least at the \$40K+ level to get much attention, which means broadening the work to include "study" areas for future developments. Nat Inst of Deafness (or whatever) might provide the small amount of money we want more readily. So, if you concur I'd like to make some phone calls to those indicated in Roger's correspondence, to sound out the prospects, get the rules of the road, get some forms in hand. The price may go up from the \$5K figure you quoted because that becomes too small to be taken seriously. If the NIH full review process is like that at the NSF then a year is the usual time to get back reviewer's comments and prepare a revised proposal. I'd put the three of us in for a month apiece, plus obtaining one to hopefully two sets of working equipment (TDD stuff), and try to find a natural subject to use as a tester. USU has a handicapped persons program and they might have a local tester; Columbia probably has them by the hundred. Let me call and then we can plan more finely. But I won't call until getting feedback from you and Chris.

Konstantin: I thought it was a straight forward message, and not really cold at all. And we knew the topic would arise. The solution, for the near time, is to move the TRANSLATION table one step closer to the serial port so detection of C1 controls occurs after the table. Let's say we try this in MSK 3.01. If you concur then I'll tell him the concept and see if he thinks it would be suitable. Meanwhile, he seems to have plenty of troubles getting sliding windows to operate. I'll have to ask him some questions to understand how his experiments were operated. I need his kind of feedback to do a better job.

Joe D.

Return-Path: <fdc>
Received: by watsun.cc.columbia.edu (5.59/FCB)
id AA24927; Mon, 29 Jan 90 21:02:10 EST
Date: Mon, 29 Jan 90 21:02:09 EST
From: Frank da Cruz <fdc@watsun.cc.columbia.edu>
To: Joe Doupnik <JRD@cc.usu.edu>
Subject: Re: MSK 3.00 makes it to Moscow
In-Reply-To: Your message of Mon, 29 Jan 90 18:01 MDT
Message-Id: <CMM.0.88.633664929.fdc@watsun.cc.columbia.edu>

TDD proposal... What would be needed?

- . A real TDD system (usually this a hardcopy terminal with a built-in TDD modem). One example is the Memory Printer or Portaprinter from Krown Research Inc (1-800-833-4968) (some names there are Mike Anderson and Stan Sikorsky). These come in various models - some with acoustic modem cups built in, others with direct-connect modem built in. I think these run well under \$1000.
- . A 5-bit Baudot modem (Weitbrecht modulation). I have the names of a few standalone TDD modems, but know nothing about them: Model CM-4 from Phone-TTY of Hackensack, NJ; the SM-8 from Krown Research; also there's a PC board from Integrated Microcomputer Systems (IMS) in Rockville, MD.

A good way to find out about these devices might be an inquiry to the IBM National Support Center for Persons with Disabilities, 4111 Northside Parkway, Atlanta, GA 30327, (404) 238-3521 (that might be a TDD number) or (800) 426-2133. Come to think of it, they might even be interested in supporting this work in some way, so maybe also...

- . A PC or PS/2 dedicated to this project? If you can think of a reason why there should be one... How about this -- after the development period it could be a dedicated TDD line where people could call & leave messages, etc. Maybe a kind of TDD BBS. (Which might be a good impetus to start putting some BBS-like features into Kermit.)
- . Some of your/our time.
- . Maybe a phone line, even a WATS line?

Some areas of inquiry could be: automatic detection of and switching between ASCII and Baudot for incoming calls on the same line... Setting up a kind of e-mail system within Kermit, so that messages that come in when the user is not around can be recorded -- BBS stuff disbused as answering machine -- hopefully done using beefed-up script tools, with facilities for recalling, deleting, searching for messages, etc. Can think of lots more if pressed.

To pad the budget, maybe one of each of these things for both ends of the project (Logan and NYC).

If you want to start making calls, go ahead! - Frank

Ruch C. Curtis
Coordinator for Disabled Student Services
Office of Equal Opportunity and Affirmative Action
305 Low Library

July 14, 1988

Dear Ruth,

As you requested, here's a brief summary of the TDD situation. Telecommunication Devices for the Deaf (TDD's), as you know, consist of terminals and modems, which allow hearing-impaired people to communicate over the phone by typing. When one person types, the message appears on the other person's screen or printer.

If these were ordinary computer terminals and modems, they would pose no problem. However, TDD technology dates back to the late 1940s, before today's common data communication standards existed, and so they use a different encoding and transmission technique, which, unfortunately, is incompatible with the Rolm data phone and, in fact, with all the computers and terminals in use at Columbia. Specifically, TDD's use a 5-bit "Baudot" code with "Weitbrecht" modulation, whereas the rest of the data world uses the 7-bit "ASCII" code with Bell 103, Bell 212A, or V.22 modulation.

Now, because the Rolmphone is digital, it can't be used with direct-connect modems -- the ones that connect to the phone jack with a modular plug. And because the TDD's data length and encoding is not 7-bit ASCII, it can't use the Rolm CBX's modem pool or interact with Rolm data phone's call setup dialog.

There are several solutions to this problem:

1. TDD makers are gradually migrating away from the 5-bit code. Some TDD's of recent manufacture offer an ASCII option to allow ordinary terminals and PC's to function as TDD's. Such TDD's may be used with the Rolm data phone, but only if they have a "serial port", that is if they have an EXTERNAL modem. In this case, the Rolm phone replaces the external modem.
2. If the TDD is acoustically coupled rather than direct-connect, then it may be used with the Rolm phone. Acoustically coupled modems are the kind that have two rubber cups into which one inserts the speaker & mouthpiece of the telephone handset. Acoustic modems have been successfully tested with the Rolm phone at speeds up to 1200 bits per second, and TDD's are typically much slower.
3. For direct-connect TDD's, it is possible to buy a modem adapter, which converts a direct-connect modem into an acoustic one. These cost \$100 - \$150. I have a sample (Novation MA100) which was successfully tested with the Rolm system, but unfortunately the manufacturer just went bankrupt. There are others on the market that we haven't tested.
4. If there is a campus phone line which is to be used only for TDD, then it makes sense to order a special "analog" Rolm phone for this purpose. Such a phone would allow TDD use with other

analog lines on campus, and with off-campus lines, and possibly (though not definitely) with acoustically coupled TDDs on campus digital lines.

5. Switch from TDD to a regular ASCII terminal or PC (such as an IBM PC or Apple Macintosh). This would preclude communication with "real" TDD's, but it seems to be a trend.

A second concern for hearing-impaired people is use of the Rolmphone with hearing aids. A regular phone emits sufficient magnetic field that the hearing aid can pick it up. The Rolm phone's receiver is different, however, and requires a hearing aid adapter, which has a \$25.00 installation fee and a monthly charge of \$1.00.

Finally, I'd suggest that you encourage disabled students to obtain access to our central instructional computers. Electronic mail can take the place of TDD's, offering much greater flexibility and functionality. And there are a large number of "bulletin boards" on a wide range of topics, including one devoted to issues facing the disabled.

If you have any additional questions or concerns, don't hesitate to call me. For further information about analog lines and hearing aid adapters, contact Neil Sachnoff. And please keep me informed about your progress in this area.

Frank

Frank da Cruz
Senior Planning Officer

x 3508

Ruth Curtis, Affirmative Action Office, x5511.

Learned that 300 baud acoustically-coupled modems work on voice side of Rolmphone. Told Ruth that acoustically-coupled TDDs should therefore work also. She will order coupler-adapters for her TDDs.

Talked to Pat Gould at Lexington School for the Deaf, 718-899-8686. She says they have a Rolm switch (model unknown) and use TDDs with acoustic couplers with it, no problem.

Models known to work include Ultratech Minicom 3 and 4, Krown Research TDD Portaprinter and MP40, so long as they have acoustic couplers.

Mark Timony, Student Coordinator, Earl Hall Disabled Student Services, says he talked to Neil, who says that analog lines can be installed for TDDs. Pat Thompson, also of that office, x3574.

COLUMBIA UNIVERSITY
INTERDEPARTMENT MEMORANDUM

Date 3-9-88

To Frank DeCruz

Subject RoIm System accomodation of analog lines for TTYs

Dear Mr. DeCruz,

This is just a note to inform you that the Office of Disabled Student Services has contacted Niel Sachnoff, who is directing the installation of the RoIm telephone system, regarding the need for the installation of additional analog lines to accomodate TTY machines. Mr. Sachnoff has said that he would be glad to cooperate in installing these lines. Furthermore, he has said that the number of lines should not be too great and that these lines should generally be confined to dorms and libraries. Hopefully, this poses no problems; however, if you have further questions, you should probably direct them to Mr. Sachnoff. In any event, please call either myself or Pat Thompson at x3754 if you want to speak to us further about this matter.

Sincerely,

Mark Timoney
~~Work Study Employee~~

Student Coordinator, DSS

Columbia University
in the City of New York
New York, N. Y. 10027

THE EARL HALL CENTER
DISABLED STUDENT SERVICES

Ruth (X) Curtis (X) Low Lib called, said
x5511

Mar 15, 88

Center
Lexington School for the Deaf

uses // Pat Gould 718-899-8686
[BKlyn]

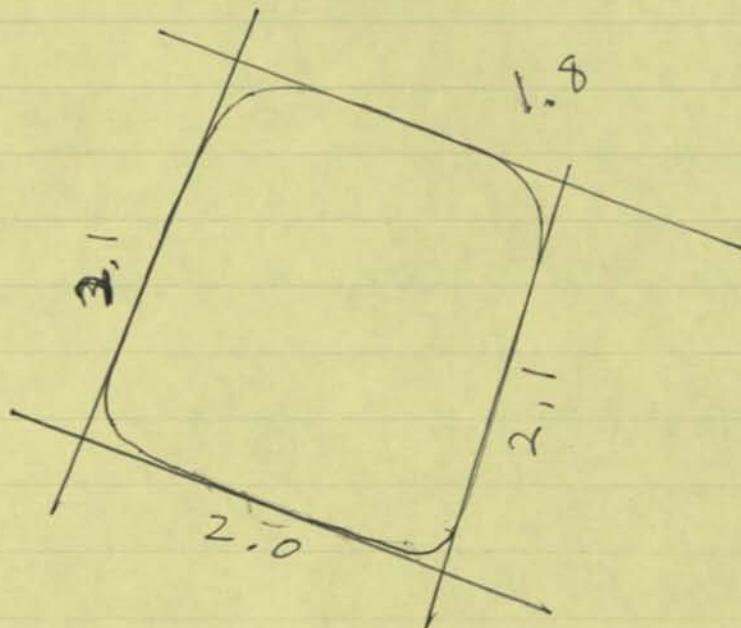
Minicomms - brand of TDD

TDD - direct only analog
- acoustic coupler

Krown Research L.A.
1-800-833-4968
Engr. Mike Anderson
Sales, Stan Sikorsky
TDD Porta printer +
MP 40

4211
4911
5380
8050

3006 Acoustic coupler works
with Rolm phone (voice side).



MEMORANDUM

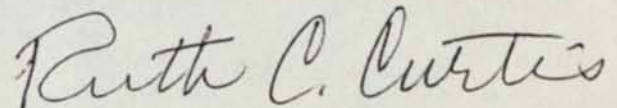
TO: Neil Sachnoff

RE: Compatibility Between TDD's and ROLM's Digital System Via Acoustic Coupler

March 29, 1988

We would appreciate a written confirmation of the new finding by Telecommunications that our two Krown Research MP40 telecommunications devices for the deaf (TDD's) will function with ROLM's digital system through the use of acoustic couplers. I was assured by Krown Research's Mike Anderson, an engineer, and Stan Sikorski (marketing) that this was so. Frank DaCruz then spoke with Mike and called me to say that he had been convinced that it was so.

We are taking the step of requesting a written confirmation because of the previous warning from Telecommunications that TDD's would work only with analog systems. Thank you.



Ruth C. Curtis
Coordinator Disabled Student Services

cc: Frank DaCruz

RCC:ew5(11)

11-Mar-88 11:15:02-EST,3320;000000000001
Mail-From: SY.KEN created at 11-Mar-88 11:14:59
Return-Path: <mailer-daemon@columbia.edu>
Received: from columbia.edu by CU20B.COLUMBIA.EDU with TCP; Fri 11 Mar 88 04:25:20-
Received: from CU20B.COLUMBIA.EDU by columbia.edu (5.54/1.14)
id AA26826; Fri, 11 Mar 88 04:23:01 EST
Date: Fri, 11 Mar 88 04:23:01 EST
From: Mail Delivery Subsystem <mailer-daemon@columbia.edu>
Subject: Returned mail: Host unknown
Message-Id: <8803110923.AA26826@columbia.edu>
To: <Mailer@cu20b.columbia.edu>
ReSent-Date: Fri 11 Mar 88 11:14:59-EST
ReSent-From: Ken Rossman <sy.Ken@CU20B.COLUMBIA.EDU>
ReSent-To: frank@CU20B.COLUMBIA.EDU
ReSent-Message-ID: <12381500755.20.SY.KEN@CU20B.COLUMBIA.EDU>

----- Transcript of session follows -----
550 <Eric_Bohlman%stjhmc@COLUMBIA.EDU>... Host unknown

----- Unsent message follows -----
Received: from CU20B.COLUMBIA.EDU by columbia.edu (5.54/1.14)
id AA26824; Fri, 11 Mar 88 04:23:01 EST
Message-Id: <8803110923.AA26824@columbia.edu>
Date: Fri 11 Mar 88 04:24:52-EST
From: The Mailer Daemon <Mailer@cu20b.columbia.edu>
To: Eric_Bohlman@stjhmc.uucp
Subject: Message of 11-Mar-88 04:24:37

Message failed for the following:
noao!sy.fdc@CU20B.COLUMBIA.EDU: No such mailbox

Received: from columbia.edu by CU20B.COLUMBIA.EDU with TCP; Fri 11 Mar 88 04:24:38-
Received: from RELAY.CS.NET by columbia.edu (5.54/1.14)
id AA26820; Fri, 11 Mar 88 04:22:21 EST
Message-Id: <8803110922.AA26820@columbia.edu>
Received: from relay2.cs.net by RELAY.CS.NET id aa04731; 11 Mar 88 3:39 EST
Received: from asu.edu by RELAY.CS.NET id ab03512; 11 Mar 88 3:29 EST
Received: by asuvax (5.51/5.17)
id AA00335; Thu, 10 Mar 88 08:09:15 MST
Date: Thu, 10 Mar 88 08:09:15 MST
From: Eric_Bohlman <@asu.edu:Eric_Bohlman@stjhmc.uucp>
To: asuvax!noao!sy.fdc@cu20b.columbia.edu.arpa
Subject: Phones

There ARE modems available that take 7-bit ASCII at 300 bps and output 5-bit Baudot using the Weitbrecht standard (that's the one that TDD's use) at the appropriate rate, and vice versa. They are expensive (around \$400) and can't handle higher ASCII rates than 300, so they'd have to be "segregated." I forget the manufacturers, but there are others on this echo who should know. That still, however, doesn't address the question of using personal TDD's, because those don't have RS-232 outputs; they contain INTERNAL modems and either connect directly to an ordinary phone line or use acoustic coupling. With the modem pool, users who would normally use a TDD would have to use (and learn) a terminal program on a PC instead.

The second question is somewhat easier. The regulations require that phones in certain areas be hearing-aid-compatible. This is a function of the receiver element in the phone, not the method of line transmissions. Compatible phones have a receiver element that emits a sufficient magnetic field that a hearing aid can pick it up. I would talk to the manufacturer of the phones to find out whether they have such elements available.

--- FastScan v2.0

* Origin: COPH-2 FIDO (BGMS) Chicago, IL (115/778)

St. Joseph's Hospital/Medical Center - Usenet <=> FidoNet Gateway

uucp:{decvax, hao, ihnp4} !noao!asuvax!stjhmc!<user> FidoNet=> 1:114/15

20-Oct-87 17:00:53-EDT,12206;000000000001
Return-Path: <@CUVMA.COLUMBIA.EDU:L-HCAP@NDSUVM1.BITNET>
Received: from CUVMA.COLUMBIA.EDU by CU20B.COLUMBIA.EDU with TCP; Tue 20 Oct 87 17:
Received: from CUVMA.COLUMBIA.EDU by CUVMA.COLUMBIA.EDU ; Tue, 20 Oct 87 16:58:16 E
Received: from NDSUVM1.BITNET by CUVMA.COLUMBIA.EDU (Mailer X1.25) with BSMTF
id 8399; Tue, 20 Oct 87 14:26:55 EDT
Received: by NDSUVM1 (Mailer X1.24) id 2647; Tue, 20 Oct 87 12:48:19 CDT
Date: Tue, 20 Oct 1987 12:41 CDT
Reply-To: L-HCAP List <L-HCAP%NDSUVM1.BITNET@CUVMA.COLUMBIA.EDU>
Sender: L-HCAP List <L-HCAP%NDSUVM1.BITNET@CUVMA.COLUMBIA.EDU>
From: Bob Puyear <NU025213@NDSUVM1.BITNET@CUVMA.COLUMBIA.EDU>
Subject: L-HCAP Digest Vol. 1 No. 21
To: Distribution List <LOCAL-HANDICAPPED@CU20B.COLUMBIA.EDU>

Beginning of L-HCAP DIGEST Vol 1 Number 21 October 20, 1987

Bob Puyear <NU025213@NDSUVM1>, Editor (701) 232-2279 or 237-7149
Published by L-HCAP@NDSUVM1.BITNET at wiscvm.wisc.edu
North Dakota State University, Fargo, ND 58105 (USA)

Contents:

- 1) character graphics SI, negative handicap NO
- 2) Funding needed for academic day camp ("Summer Trek")
- 3) Use of Kermit by the Disabled

Send submissions to (BITNET, EARN, NetNorth) NU025213@NDSUVM1
(ARPANET) NU025213@NDSUVM1.BITNET@wiscvm.wisc.edu
(UUCP) ...!psuvax!NDSUVM1.BITNET!NU025213

From: STANKULI <XMOP@PURCCVM>
Subject: character graphics SI, negative handicap NO
To: bob puyear <NU025213@NDSUVM1>

TO: L-HCAP mailing list

I would like to comment on your bogus editorial decision to remove character graphics from L-HCAP because "graphics create inconveniences for individuals using screen review programs and voice synthesizers." A couple years ago there was some discussion in the BIXNET handicap conference by blind users accessing public BBSs which use character graphics. In general the nonsighted guys wanted them done away with but the BBS sysops refused saying that the voice synthesizer software should be made smart enough to not do brain-damaged things like repeat 'asterick' 80 times in a row. I summarized some of this conversation for the ARPANET VPLLIST at that time. Eventually some of the sysops installed a back-door entry which turned off extraneous output for the listening-only audience. This is equivalent to an architect providing a ramp access for wheelchairs rather than tearing out all the stairs.

Anybody who has taken a intro course in programming should be able to write a preprocessor which takes a text file and replaces any string of repeated characters with blanks. At the time I know I wrote such a program for someone and the user could easily set the sensitivity for how many repetitions they desired before skipping, or the program could insert a line like 'A STRING OF 81 HYPHENS IS HERE' as a replacement. This was trivial program to write. It

could serve as one of the utilities a nonsighted user could choose or not-- that is positive handicapping. Adding something which helps a disabled person in the environment we all use.

What you have done is negative handicapping-- taking something away from everyone so a special-interest group has less disadvantage. The word handicapping originally referred to the practice of adding weights to the saddle of the strongest horses so the weaker ones could compete in a race. Personally, I make extensive use of the character graphics in L-HCAP and other digests when scanning over the material. The header is usually preceded by dense network routing information and I need to skip that to scan the topics in this digest header. If I am interested in the fourth topic, each message should be separated by graphic boundaries so I know right where to skip to. Besides, I genuinely enjoy the clever graphics that the contributors of many network digests add to their messages. It is not necessary to impoverish the visual medium to solve the problems of the voice-synth technology.

I believe that almost all instances of negative handicapping have been short-sighted and generally resented. For instance, I have some retarded friends who are interested in L-HCAP, but they find that the use of long words "creates a great inconvenience" in their use of the material (I have to explain a lot of it to them). Since the character graphics are gone for the blind, lets get rid of all words of more than 2 syllables for the disabled readers. :-)

For the listen-only group, that last sequence "colon hyphen right parenthesis" is a standard character graph known as SMILE-FACE which means the writer grins at this point. It looks like a smiling face sideways. Last summer AILIST ran a series of messages called Terminal Talk which collected about 200 such character graphic conventions. I see no reason why preprocessors like the one I described earlier don't recognize such standard typographical use and substitute phrases you can hear and understand. If you have an Amiga, IIGs, MAC II or some micro with built in sound capacities, a chord of pleasant tones could go in place of ***** so you can hear the boundaries that others see. If you were programming PASCAL the sequence ">=" could be read as "IS GREATER THAN OR EQUAL TO" which is how it is read by a human reader of code. It is such a simple program to preprocess text files into something which fits your personal use of the material. Capturing the same utility in an interactive environment is a little more tricky, but not out of the range of present technology.

Negative handicapping never creates a general solution to a problem of differing abilities. Even if we accept visual impoverishment in L-HCAP, none of the other digests are going to adopt it and the problems of listen-only terminals are still going to exist until we do something positive about the situation. Let's put the graphics back,

stan

(Editor's Note: The removal of graphic characters was not done with the intent of negative handicapping for those of use who are fortunate enough to have our sight. I will put them back in this digest when any of you computer programers can provide me with a program that will filter out these repetitive characters when someone is using a screen review program with a voice synthesizer. --- Bob)

From: U20121 at UICVM (Steven L. Jordan 996-3307; 848-6075)
To: L-HCAP at NDSUVML
Subject: Funding needed for academic day camp ("Summer Trek")

I have been running an academic day camp ("Summer Trek") for students 11-14 years old. This was the third year of this program, and we had 200 students attend, many repeating. Students come from all over the Chicago area, representing a wonderful economic, ethnic, racial, and geographical mix. Students study computer programming (Logo), mathematics, and physical education. The budget is very lean. I am looking for funds (and help, but mostly funds) to provide high quality services for students with physical disabilities, including such services as adaptive p.e., software and hardware, logistics, transportation. Faculty at our medical center would be involved.

I have made about 25 phone calls to agencies and foundations, and so far I have not located any appropriate grants or organizations to which I might apply. I would appreciate any leads.

From: Frank da Cruz <SY.FDC@CU20B.COLUMBIA.EDU>
Subject: Use of Kermit by the Disabled

In preparing version 2.30 of MS-DOS Kermit for release, we are trying to make the program as useful as possible for people with disabilities like motor impairment, blindness, or deafness. This program provides terminal emulation and file transfer for PCs in the IBM PC family, for IBM compatibles, the DEC Rainbow, and many other MS-DOS systems, and it is available free of charge by copying from someone who has it, downloadable over networks and BBS's, or by mail order for a modest distribution fee from Columbia University or various diskette services. There are several factors that could inhibit Kermit's use by the disabled:

The escape sequence to get back to Kermit after connecting to a remote system is Control-Rightbracket followed by C. People who can only press one key at a time should not be required to enter control sequences. Similarly, people with only one hand should not be expected to type control characters beyond their reach. The new release will allow the Kermit escape-back or other CONNECT-level escape commands to be assigned to single keys, like F1. So far so good.

The screen display during file transfer has fields for the filename, the number of packets transferred so far, the number of bytes, etc. These fields are updated randomly, so that Kermit's output during file transfer would make little sense when redirected to a Braille or voice device. SET DISPLAY SERIAL remedies this.

During terminal emulation, Kermit bypasses DOS and the BIOS and writes directly to screen memory. This would also bypass any special drivers installed by people with voice or Braille output devices. The command SET TERMINAL NONE turns off terminal emulation and uses DOS for all screen writes, allowing DOS or BIOS-level drivers to be used.

In order to allow the widest possible range of key redefinitions, Kermit uses the BIOS to obtain key scan codes, thus bypassing any DOS-level console drivers, like ANSI.SYS (but not BIOS-level drivers like SuperKey and ProKey). Kermit can be directed to use DOS to obtain key codes, but then the distinction is lost between various keys (like the digit "2" above the "Q" and "W", and the digit "2" on the numeric keypad). However, when DOS is used, there is an apparent problem in DOS itself when multiple characters are assigned to a single key (involving nonblocking character reads). Thus BIOS-level keyboard handling could potentially bypass DOS-level drivers

distributed with special keyboards, but DOS-level drivers could have annoying restrictions.

Please help us to make the program as useful as possible by answering the following questions (or offering any other comments):

1. If you are directing screen output to a voice, Braille, or other device, please let us know what the device is, how the redirection is done, and (if you know it) whether the redirection is at the DOS, BIOS, or hardware level. Also, are there screen drivers for the deaf that translate sounds (like the terminal beep) into special visual effects? Again, at what level do they operate?
2. If you have a special keyboard, keyboard replacement, or keyboard driver, please let us know about it. Does the driver operate at the DOS, BIOS, or hardware level? Does the device look like a real keyboard to the system's BIOS?
3. What about TDD modems? Clearly, Kermit or other ASCII-based communication programs are not compatible with Baudot-only TDD systems. Translating between ASCII and Baudot is not a practical solution, because the ASCII alphabet is more than twice the size of Baudot. Packet-mode file transfer would be impossible because the Kermit packets could not be uniquely reconstructed on the receiving end. Presumably there is movement in the TDD world away from Baudot to ASCII code?
4. Any other considerations we may have overlooked?

Thanks for your help!

Frank da Cruz
Columbia University
Center for Computing Activities
612 West 115th Street
New York, NY 10025 USA

Network addresses:
SY.FDC@CU20B.COLUMBIA.EDU (Internet)
FDCCU@CUVMA (BITNET)
...uunet!columbia!cu20b!sy.fdc (Usenet)

End of L-HCAP DIGEST Vol 1 Number 21 October 20, 1987

21-Jul-87 17:48:26-EDT,12493;000000000001
Return-Path: <L-HCAP%NDSUVM1.BITNET@CUVMA.COLUMBIA.EDU>
Received: from CUVMA.COLUMBIA.EDU by CU20B.COLUMBIA.EDU with TCP; Tue 21 Jul 87 17:
Received: from NDSUVM1.BITNET by CUVMA.COLUMBIA.EDU (Mailer X1.24) with BSMTF
id 1554; Tue, 21 Jul 87 17:47:35 EDT
Received: by NDSUVM1 (Mailer X1.24) id 2518; Tue, 21 Jul 87 16:42:25 CDT
Date: Tue, 21 Jul 1987 16:37 CDT
Reply-To: L-HCAP List <L-HCAP@NDSUVM1>
Sender: L-HCAP List <L-HCAP@NDSUVM1>
From: Bob Puyear <NU025213@NDSUVM1>
Subject: L-HCAP Digest Vol 1 No. 13
To: Distribution List <LOCAL-HANDICAPPED@CU20B.COLUMBIA.EDU>

Beginning of L-HCAP DIGEST Vol 1 Number 13 July 21,1987

Bob Puyear <NU025213@NDSUVM1>, Editor (701) 232-2279 or 237-7149
Published by L-HCAP@NDSUVM1.BITNET at wiscvm.wisc.edu
North Dakota State University, Fargo, ND 58105 (USA)

Contents:

- 1) Query regarding IBM Catalog
- 2) Israeli TDD standards

Send submissions to (BITNET, EARN, NetNorth) NU025213@NDSUVM1
(ARPANET) NU025213@NDSUVM1.BITNET@wiscvm.wisc.edu
(UUCP) ...!psuvax!NDSUVM1.BITNET!NU025213

Date: Wed, 24 Jun 87 16:49:34 MDT
From: James L Eggett <JLE@BYUADMIN>
Subject: Query regarding IBM Catalog
To: Parties on BITNET Handicap conference <L-HCAP@NDSUVM1>

Last Year (March 1986) I saw a catalog of specialized equipment for the
handicapped. The manual was at the IBM Publications stand. Since then,
I have not been able to find out anything more about it.

Does anybody in Netland know

- a) of it's existence.
- b) the order number that can get me a copy from IBM.

(Editor's Note: Just received IBM's address etc in the mail yesterday,
7-20-1987.

IBM National Support Center for Persons with Disabilities,
4111 Northside Parkway, Atlanta, GA 30327, (404) 238-3521 (voice/TDD),
(800) 426-2133 ---Bob)

Date: Sat, 11 Jul 87 22:41:52 EDT
From: Richard Barth <BARTH@AI.AI.MIT.EDU>
TO: L-HCAP%NDSUVM1.BITNET@WISCVM.WISC.EDU
Subject: Israeli TDD standards

I have received the following draft standard for TDDs
(Telecommunications Devices for the Deaf) to be used in Israel. The
authors, Omer Zak and Susan Bullowa, asked me to circulate this draft
and collect comments to be forwarded to them. I'm in the process of
doing so now.

Suggestions are particularly being sought as to items which
may be missing from the draft standard, but which may be necessary to
ensure compatibility among future generations of equipment. In
addition, proposed changes to ensure proper operation are solicited.

Please send comments to any of the following addresses:

ARPANET barth@ai.ai.mit.edu
 MCI MAIL barth
 TELEMAIL rbarth
 BBS MAIL Handicapped Educational Exchange (HEX) BBS
 (301) 593-7033 (Silver Spring MD) TDD or 300 baud ASCII
 or
 AMRAD PCboard (703) 734-1387 Falls Church VA
 ASCII only, 300 or 1200 baud; file upload possible
 US MAIL 11523 Charlton Drive, Silver Spring MD 20902
 VOICE MAIL "Hey, you!"

A PROPOSAL FOR ISRAELI TDD TELECOMMUNICATION STANDARD - Version 2

By: Omer Zak, EE Translated: Omer Zak Style editor: Susan Bullowa
 Date: Dec. 12, 1985 Tr. date: June 4, 1987

```

*****
* COPYRIGHT, 1987 by Omer Zak and Susan Bullowa.                    *
* Permission is hereby given to freely reproduce this document for any *
* non-commercial purpose provided that the source is acknowledged and  *
* the copyright notice is retained.                                     *
*                                                                       *
* This document is a translation of the Hebrew-language Israeli TDD    *
* Standard.  In case of contradiction between the Hebrew and English  *
* versions, the Hebrew version is the binding one.                   *
*****
  
```

1. GENERAL

This proposal for standard for TDD telecommunication is an improved and extended version of the proposal which was published at Nov. 11, 1984 and which has undergone minor changes at Oct. 6, 1985. The present version incorporates changes, the need for which arose as result from comments by people who received for criticism the original proposal, and also from practical experience which accumulated during the time which passed since the publication of the original proposal.

This proposal for TDD telecommunication standard is not final. Anyone who has comments or suggestions for improving the standard - is asked to bring them to Omer Zak's knowledge.

2. GOALS OF THE STANDARD FOR ISRAELI TDD TELECOMMUNICATION

The goals of the standard for Israeli TDD telecommunication are as follows:

- a) Ensure that any 2 systems, which each meet the standard requirements, will be able to "talk" with each other without requiring any checking, tuning or additional experimentation other than checking for compliance with all the standard requirements.
- b) Choose a telecommunication method which is relatively tolerant to phone line noise.
- c) Be as compatible as possible with data telecommunications equipment in wide usage in Israel, and do so by adopting the most often used telecommu-
nication standards in Israel.

The standard for Israeli TDD telecommunication applies to all types of TDDs, regardless of whether they are based upon computers or terminals, or whether they are dedicated to TDD usage.

3. SCOPE OF THE STANDARD FOR ISRAELI TDD TELECOMMUNICATION

The standard relates to and only to those technical details which are relevant to telecommunication between two systems. The standard does not specify any requirement which relates to convenience of usage, and therefore it, by itself, is not a full technical specification.

Those requirements are determined separately from the standard and are subject to periodic update, as experience in operating TDDs is accumulated.

To ensure compatibility between corresponding options of different systems which incorporate those options, the standard includes also specifications which those options must meet. It does not mean that those options must or must not exist in a particular TDD system, but only that if a certain option does exist, it must comply with the requirements of the relevant clause of the standard.

4. REQUIREMENTS WHICH EACH SYSTEM SHALL MEET

4.1. MODEM

The modem shall be asynchronous, fullduplex, be able to operate at 300 baud, and provide for choice between ORIGINATE and ANSWER modes. The modem shall be compatible with Bell 103J standard.

The signal power on the phone line shall be as specified in the CCITT V.15 standard.

4.2. TELECOMMUNICATION PROTOCOL

a) Every system shall produce and interpret characters according to the following protocol:

- 1 start bit
- 8 data bits
- 1 stop bit
- NO parity

b) The most significant bit in each character shall be zero.

c) Transmission and reception rates shall both be 300 baud.

4.3. CHARACTER SET ENCODING

All characters, which a TDD systems can decode or produce, shall be encoded according to table 2 (encoding character set according to Hebrew and Latin alphabets - the bilingual encoding) in Israeli Standard No. 960. In particular, the codes of the Hebrew letters shall be between 60(Hex) and 7A(Hex).

5. OPTIONS

5.1. WORK AT REDUCED BAUD RATE

System which supports reduced baud rate/s - shall:

a) Be capable of working at 110 baud.

b) Be capable of working according to the following protocol:

- 1 start bit
- 8 data bits
- 2 stop bits (instead of 1 stop bit)
- NO parity

5.2. WORK AT HIGH BAUD RATE

System which supports high baud rate/s - shall:

- a) Be capable of working at 1200 baud.
- b) Be capable of automatic recognition of the baud rate of incoming calls and adjust itself to work at that baud rate.

The modem compatibility will be stated in the final Israeli TDD Telecommunication Standard.

5.3. DELETING CHARACTER

A system which implements a deleting character, which deletes the last character transmitted and not already deleted, shall use the character RUBOUT (code 7F(Hex)) for this purpose.

In addition, the BACKSPACE character (code 08(Hex)), if implemented, shall have such an effect that it may be used for correcting typing mistakes on the displays of both the transmitting and the receiving sides.

5.4. X-LINE HANDSHAKE CONTROL CHARACTERS

A system, which recognizes holding and releasing characters (X-Line Handshake), shall use CTRL-S (code 13(Hex)) and CTRL-Q (code 11(Hex)) respectively for this purpose.

5.5. CONTROL CHARACTERS FOR CHANGING DIRECTION OF WRITING

A system, which supports remote control of direction of writing, shall use the following control characters:

- a) CTRL-R (DC2, code 12(Hex)) - shall cause writing to go from right to left as in Hebrew.
- b) CTRL-T (DC4, code 14(Hex)) - shall cause writing to go from left to right as in English.

5.6. NEW LINE

A system, which uses a multi-line display (so there is a meaning for the "new line" operation), shall use a sequence of characters which contains only the single character CARRIAGE RETURN (code 0D(Hex)) to signal or recognize the beginning of a new line.

In other words, the system shall advance to the next line in the display even if it doesn't receive any LINE FEED control character from the system on the second side of the phone line. In addition, a system, which desires to signal the beginning of a new line, shall not have to transmit the LINE FEED control character to guarantee correct display on the receiving side of the phone line.

APPENDIX: ENCODING OF HEBREW LETTERS

The following table gives the encodings of the Hebrew letters according to Israeli Standard No. 960.

CODE(Hex)	LETTER	CODE(Hex)	LETTER	CODE(Hex)	LETTER	CODE(Hex)	LETTER
60	aleph	68	tet	70	nun	78	resh
61	bet	69	yod	71	samekh	79	shin
62	gimel	6A	kaf sofit	72	ayin	7A	tav
63	dalet	6B	kaf	73	peh sofit		
64	heh	6C	lamed	74	peh		
65	vav	6D	mem sofit	75	tsadi sofit		
66	zayin	6E	mem	76	tsadi		
67	khet	6F	nun sofit	77	kof		

Date: Fri, 2 Oct 1987 16:29 CDT
Sender: L-HCAP List <L-HCAP@NDSUVM1>
From: Bob Puyear <NU025213@NDSUVM1>
Subject: Handicap Digest No. 135

THE HANDICAP DIGEST

Issue # 135

Friday, September 4, 1987

Today's Topics:

Re: Voice Synthesizers
Re: Amiga
Voicelink
Ascii vs. Baudot

Subject: Ascii vs. Baudot
Written-by: Scott Samet (FidoNet 135/14)

To: Someone Who Asked About Baudot

Someone asked to have the difference explained. I didn't have time to answer right then, and I can't find the original message, but here is the answer...

ASCII and Baudot are two different ways of encoding text for transmission. Imagine if people in China had developed a braille system based on a 5 by 6 dot grid so that they could express the thousands of characters in their alphabet. That kind of expresses the difference between Ascii and Baudot.

All computer transmissions are done in binary. Baudot uses a group of zeros or ones (Bits) to express a character. Ascii uses a group of eight bits for each character. Since Ascii uses more bits per character, it can represent a larger character set.

Baudot is a very old standard, going back to the early days of teletypes. It has little or no use today, except for TDD devices. The Personal and Business computers today all use Ascii or EBCDIC, another eight bit code.

There is no reason why Ascii and Baudot cannot be converted. This can be done by a special purpose device, or by a program in a computer.

BUT BUT BUT. There are other difference between TDD and computer communications besides the Ascii/Baudot difference.

In order for computers to communicate, the bits have to be converted to tone signals, in order to transmit them over a phone line. TDD uses a different set of tones than those used by Ascii based computers. Unless you want to buy a special modem that handles both TDD and "regular" computer tones, you will have trouble.

In addition, TDD's are very slow, with a maximum speed of about 10 char/sec. The oldest computer equipment in common use is 30 Char/Sec, and modern modems in the \$200 range go up to 120 char/sec. Newer stuff on the market (\$500-\$1000) goes up to 960 char/sec. I expect these will drop in price, since the 120 char/sec are one half of what they were 18 months ago.

AT&T (and I am sure others) make TDD's that work with both regular TDD and modern ASCII computers. I've been told they are not the best on the market. Two outfits (they've been mentioned on the echo, but I don't have the info handy) make modems for regular computers that work with both TDD and ASCII tones. One sells a complete IBM/XT clone system with software and modem for TDD/ASCII use. While these are not cheap, it will let you talk to TDD users with old equipment, while taking advantage of the speed and wide variety of computer systems that use the modern ASCII format.

--- ConfMail v3.1

* Origin: MetroFire - Miami, FL (1:135/14)

To join this group or have your thoughts in the next issue, please send electronic mail to Bill McGarry at the following address:

{decvax, philabs, yale, fortune)!bunker!wtm

Note: To send mail to someone on FidoNet, include the name and the net/node number (e.g., 115/777) of the person and send the mail to Dr. David Dodell at:

ddodell@gryphon.CTS.COM -or- ..!philabs!cadovax!gryphon!ddodell

End of Issue # 135 of the Handicap Digest

Date: Wed, 7 Oct 1987 00:05 CDT
Sender: L-HCAP List <L-HCAP@NDSUVM1>
From: Bob Puyear <NU025213@NDSUVM1>
Subject: Handicap Digest No. 142
To: Distribution List <LOCAL-HANDICAPPED@CU20B.COLUMBIA.EDU>

THE HANDICAP DIGEST

Issue # 142

Thursday, September 24, 1987

Today's Topics:

New Handicap Digest Format
Braille printing
speaking program source code
Personics Headmaster
Re: Info Wanted on TDD vs TTY

Subject: Re: Info Wanted on TDD vs TTY
Written by: Dick Barth (FidoNet 109/634)

To: !houxm!vax135!richard Of 1/1

The message I'm answering has been on for a while, and may have been answered already. (I'm not going to go through all the following traffic before answering it myself, though, so if this is redundant, please ignore.)

TDD's use Baudot, an earlier communications code than ASCII. Baudot uses one stop bit, five data bits, and 1.5 stop bits. There is no parity

bit. (Actually, the old teleprinter machines used 1.42 stop bits, but there's no UART that can handle that and 1.5 is close enough.) The baud rate for TDDs is 45.5 baud; European TDDs often use 50. 45.4 baud is the well-known "60 words per minute".

Not all UARTs can handle the Baudot code. The 6850 chip commonly used in computers using the 6800 series of CPUs, can't. The 8250 and 8250 often used in MS-DOS and CP/M boxes, can.

The biggest problem in interfacing computers to TDDs is not the code. Code conversion is easily done in a lookup table, and public domain software is available to do it for many machines. The problem is the modem. ASCII modems will not talk to TDDs, except for the few and expensive TDDs that have an ASCII capability. These are not acting as TDDs, but rather as ASCII terminals.

A TDD modem uses a single frequency pair both to transmit and to receive. Obviously, then, it can't do both at the same time. The pair is 1400 Hz (mark tone) and 1800 Hz (space). A TDD starts sending tone when you type the first key and is supposed to stop within a few tenths of a second after the last character is typed.

Commercial TDD modems for computers are available, but they're not cheap. Among the most versatile are the Model CM-4 from Phone-TTY of Hackensack NJ and the SM-85 from Krown. The latter includes code conversion in internal software while the former does not.

Public domain software is available for certain computers (IBM-PC, PCjr, Color Computer) that will allow these machines to function as TDDs without a modem. The cassette port of the computer is used to emulate a modem and a modified telephone amplifier (or another technique) is used to couple the cassette port to the phone line. This software is free, and available from me for a blank disk and return postage.

TDD modems are relatively simple devices, similar to Bell-103 modems used for slow baud rate ASCII. In fact, my BBS (which accepts ASCII and BBS calls) uses a modified VADIC -103 card to do it. You can also build a TDD modem from scratch using, e.g., the XR2206 and XR2211 chips for the modem (both from EXAR, Inc.) and the MF10 for the filter. All are available from Radio Shack.

The TI Silent 700 won't hack it. It's ASCII only, has no means to do code conversion, and uses the wrong kind of modem.

* Origin: Insight of Washington, DC (202) 543-2146 (Opus 1:109/634)

To join this group or have your thoughts in the next issue, please send electronic mail to Bill McGarry at the following address:

{decvax, philabs, yale, fortune}!bunker!wtm

Note: To send mail to someone on FidoNet, include the name and the net/node number (e.g., 115/777) of the person and send the mail to Dr. David Dodell at:

ddodell@gryphon.CTS.COM -or- ..!philabs!cadovax!gryphon!ddodell

End of Issue # 142 of the Handicap Digest

Date: Tue, 27 Oct 1987 15:05 CST
Reply-To: L-HCAP List <L-HCAP%NDSUVM1.BITNET@CUVMA.COLUMBIA.EDU>
Sender: L-HCAP List <L-HCAP%NDSUVM1.BITNET@CUVMA.COLUMBIA.EDU>
From: Bob Puyear <NU025213%NDSUVM1.BITNET@CUVMA.COLUMBIA.EDU>
Subject: Handicap Digest No. 176
To: Distribution List <LOCAL-HANDICAPPED@CU20B.COLUMBIA.EDU>

THE HANDICAP DIGEST

Issue # 176

Tuesday, October 20, 1987

Today's Topics:

ASCII and TDD on one line
Re: ASCII and TDD on one line

To join this group or have your thoughts in the next issue, please send electronic mail to Bill McGarry at the following address:

{decvax, philabs, yale, fortune}!bunker!wtm

Bill McGarry (Moderator)
Bunker Ramo, Shelton, CT
(203) 337-1518

Subject: ASCII and TDD on one line
Written by: Dick Barth (FidoNet 109/634)

To: Marc Moyantcheff

Hi, Marc. Sorry for the confusion, however it happened. I'm answering your question via the net in case there are others who may be interested in ways of letting a BBS answer both TDD and ASCII calls on the same phone line. There are probably several ways of doing it; here's how I did it.

HEX handles ASCII at 300 baud only; that's the way I built the system, not a limitation of the technique. Of course, it also handles TDD. At the time I built it there were no commercial ASCII/TDD modems available, so I had to modify an ASCII modem (a Bell-103 compatible card from VADIC) to produce TDD tones. Both -103 and TDDs use the same modulation technique, called Frequency Shift Keying (FSK), so the modification consisted mostly of changing the resonant frequencies of the oscillators and band-pass filters. Since you're using a CM-4, you don't have to worry about any of that.

Incoming calls are answered by a U.S. Robotics model USR-330, a -103 compatible modem that has the advantage of a separate DAA. (The DAA, or Data Access Arrangement, is required under FCC rules to prevent injury to the phone system by attached hardware such as modems.) The DAA connects to the phone line and to the modem. In my case, it connects to the phone line and to two modems, the original USR and the added VADIC. Either modem will talk through the DAA to the phone line. The computer turns one or the other modem off. As I said, incoming calls are answered by the USR, which sends answer tone down the line. If the caller is using ASCII, he'll send originate tone in response. If the modem sees originate tone, it sets its Carrier Detect pin (part of the RS-232 cable) high, telling the computer

that carrier has been found. The computer then knows that ASCII is being used, and talks to the caller as usual.

If after about ten seconds originate tone has *not* been detected, the computer assumes that a TDD is being used. It then gates ON the TDD modem by setting its DTR pin high, sets an internal flag which sends all modem I/O through ASCII/Baudot code conversion routines, and sends several downshift characters out the modem port. All outgoing Baudot characters reset a monostable, holding the phone off hook (by grounding a DAA pin) for about a minute after the last character is sent. DTR to the ASCII modem is then dropped, turning off this modem. Presto, we're in Baudot mode; all modem I/O is Baudot via the TDD modem.

You have the manual for the CM-4 and know that DTR and RTS are used to control it. Depending on which of these pins are high the CM-4 is in one of four modes: on-hook, ASCII originate, ASCII answer, or TDD. You can use this modem for 300 baud ASCII and for TDD calls.

To go to 1200 baud you of course have to change modems. Again, several ways to do it. You can use one of the auxiliary I/O pins on the 8250 to control DTR on the 1200, and use the *real* DTR/RTS to handle the CM-4. Instantly when you set DTR and RTS low; this is required since that's how you pulse dial the thing. Your 1200 may not be so obliging.

Suggested procedure: use the 1200 to answer the call. If no carrier detected after ten seconds or so, it tells your computer using whatever protocol you have handy. (Hayes-style modem actually say something; if this won't work you can do as I did and monitor CXD.) No ASCII carrier implies TDD call; take the CM-4 off hook before dropping DTR on the 1200 so the phone doesn't get hung up by mistake. Enable code conversion, set the CM-4 to TDD mode, and go.

Hope this is clear. If not, let me know and I'll try again.

* Origin: Insight of Wash.DC (SEAdog,Opus,UseNet) (Opus 1:109/634)

Subject: Re: ASCII and TDD on one line
Written by: Scott Samet (FidoNet 135/14)

To: Dick Barth

Great explanation of a clever way of handling Ascii and TDD on one line. One comment: DAAs are almost impossible to find these days, since almost 100% of the equipment on the market is certified for direct connect to the phone line.

If I were Marc, I'd take advantage of the PC's two COM ports. I'd put the Ascii modem on one, and the TDD modem on the other. As you suggested, the Ascii modem would answer, and if I didn't get a connect in 10-15 seconds, I would force the TDD modem to off hook, hang up the Ascii modem, then force the TDD modem to answer state. I don't know the CM-4 well enough to be sure that you can handle these transitions (on-hook, off-hook, answer tone), but assume it can be done. The internal switch would have to be expanded to select the correct COM port for all incoming and outgoing data, as well as the Baudot translate.

I guess I didn't mention that the two modems would be connected to a single line via a standard hardware-store splitter like those used for answering machines.

* Origin: MetroFire-East Coast Hub for ABLED Echo-Miami, FL (1:135/14)

To join this group or have your thoughts in the next issue, please send electronic mail to Bill McGarry at the following address:

{decvax, philabs, yale, fortune}!bunker!wtm

Note: To send mail to someone on FidoNet, include the name and the net/node number (e.g., 115/777) of the person and send the mail to Dr. David Dodell at:

ddodell@gryphon.CTS.COM -or- ..!philabs!cadovax!gryphon!ddodell

End of Issue # 176 of the Handicap Digest

Date: Mon, 8 Feb 88 23:34:00 CST
Reply-To: L-HCAP List <L-HCAP%NDSUVM1.BITNET@CUVMA.COLUMBIA.EDU>
Sender: L-HCAP List <L-HCAP%NDSUVM1.BITNET@CUVMA.COLUMBIA.EDU>
From: Bob Puyear <NU025213%NDSUVM1.BITNET@CUVMA.COLUMBIA.EDU>
Subject: Handicap Digest No. 229
To: Distribution List <LOCAL-HANDICAPPED@CU20B.COLUMBIA.EDU>

THE HANDICAP DIGEST

Issue # 229

Wednesday, January 27, 1988

Today's Topics:

Re: Relay Service
Re: TTY Interface
(r)relay Service
Re: TDD's
ROSE READER
References needed...

To join this group or have your thoughts in the next issue, please send electronic mail to Bill McGarry at the following address:

{decvax, philabs, yale, fortune}!bunker!wtm

Bill McGarry (Moderator)
Bunker Ramo, Shelton, CT
(203) 337-1518

Subject: Re: TTY Interface
Written by: Dick_Barth@stjhmc.UUCP (Dick Barth)

Jeffrey-

Saw your msg to Marc, and thought I'd add to the noise level a bit. There are TDD modems available from several manufacturers. Phone-TTY of Hackensack NJ makes one that handles both TDD and Bell-103 tones. It is a stand-alone unit that will work with any computer having a standard RS-232 port. It comes with software for MS-DOS machines.

A second unit is available from Krown Research; it includes a microprocessor and does ASCII/Baudot code conversion. It is also a standalone, able to handle 300 or 110 baud ASCII as well as TDD calls. In ASCII modem it handles ONLY 7E1 format, and this is not suitable for use in BBS systems supporting XMODEM transfers.

A third unit, from Integrated Microcomputer Systems (IMS) of Rockville MD, is a plug-in board for the IBM-PC and clones; it similarly will hack 110 or 300 baud ASCII tones as well as TTY, and relies on the computer for code conversion.

A fourth unit, long promised and (I understand, although I have not seen one) is from Ultratech. I know nothing about this box since it is new, but it allegedly does code conversion. For further info, contact Ultratech. I only heard today that they've come up with hardware, finally, and plan to write them for specs.

Novation, of Tarzana California, makes a board modem for the Apple bus. It's called the Appecat, and works best with Bill Blue's comms software called ASCII Express-Professional.

* Origin: DynamicDuoRBBS 703/425-4506 in Springfield, VA (RBBS-PC 109/688)

Subject: Re: TDD's
Written by: Dick_Barth@stjhmc.UUCP (Dick Barth)

TDDs are a part of the "establishment" today because they came into existence before computers became a part of everybody's life. The first TDDs (a.k.a. TTYs) were surplus teletype machines, cast off by the military shortly after WWII. A deaf physicist out in California named Robert Weitbrecht came up with the idea of using these to let deaf people talk to each other. He designed a simple modem patterned after the one used by radio amateurs; Weitbrecht was a ham radio operator. It did the job for which it was intended. Unfortunately, it was not compatible with the modems eventually designed by Bell Labs for use with computers, and the result is that we now have a separate communications world inhabited almost exclusively by the deaf.

While many deaf people are getting involved with the use of computers, many aren't. Not much difference here between the deaf and the hearing- some people won't touch these funny boxes with a ten-foot pole. This leaves it to the techies among us to make computers talk to TDDs, until someday (let us hope) TDDs become ASCII-compatible. But don't hold your breath waiting for that to happen.

Cost isn't a major factor. You can buy a cheap computer (such as a Radio Shack Color Computer) plus an inexpensive modem for not much more than the cheapest TDD, which sells for about \$150. And you have a computer as well as a communications device. But it won't talk to the TDDs that many deaf people already have, and so won't serve the needs of most deaf people. There is public domain software that will make a CoCo talk to a TDD as well, but that's another story.

* Origin: DynamicDuoRBBS 703/425-4506 in Springfield, VA (RBBS-PC 109/688)

Date: Mon, 8 Feb 88 23:37:00 CST
Reply-To: L-HCAP List <L-HCAP%NDSUVM1.BITNET@CUVMA.COLUMBIA.EDU>
Sender: L-HCAP List <L-HCAP%NDSUVM1.BITNET@CUVMA.COLUMBIA.EDU>
From: Bob Puyear <NU025213%NDSUVM1.BITNET@CUVMA.COLUMBIA.EDU>
Subject: Handicap Digest No. 230
To: Distribution List <LOCAL-HANDICAPPED@CU20B.COLUMBIA.EDU>

THE HANDICAP DIGEST

Issue # 230

Wednesday, January 27, 1988

Today's Topics:

TDD's
Pds
Software Comparisons
TURBO C
KAYPRO TDD SOFTWARE...
Experience with data flow diagrams?
Controlling Pressure Sores

To join this group or have your thoughts in the next issue, please send electronic mail to Bill McGarry at the following address:

{decvax, philabs, yale, fortune}!bunker!wtm

Bill McGarry (Moderator)
Bunker Ramo, Shelton, CT
(203) 337-1518

Subject: TDD's
Written by: Eric_Bohlman@stjhmc.uucp (Eric Bohlman)

No, the reason that TDD's aren't compatible with normal computer communications isn't that the manufacturers wanted a monopoly. It's because the TDD program was started using surplus WWI-vintage Teletype machines. The TDD modem was developed before the Bell 103 as far as I know. Now maybe the manufacturers ARE remiss in not more aggressively pushing ASCII-compatibility features for their machines, but I suspect they see a lack of demand. There could be several reasons for this, not the least of which is that data communication is mainly a hobby for a lot of us, and if only a small percentage of hearing people engage in it, why should we expect a larger percentage of deaf people to do so?

* Origin: CPH-2 FIDO (BGMS) Chicago, IL (115/778)
FidoNet <=> Usenet Gateway {decvax, hao, ihnp4} !noao!asuvax!stjhmc!ddodell

Subject: KAYPRO TDD SOFTWARE...
Written by: Ian_Hebert@stjhmc.uucp (Ian Hebert)

Kaypro User Group Disk 155 TELE/DEVICE/DEAF

Files:
DI.COM
MODEM.COM
TOD3.BAS
TOD3.COM

This significant disk by Ron Friedrich allows the Kaypro to be used as a TDD, or Telecommunications Device for the Deaf.

BACKGROUND:

Originally known as Deaf TTYs, these devices were invented in 1964 by a deaf engineer, Robert Weitbrecht. They use an acoustic coupler, transforming signals from a teletype or terminal into sound impulses for transmission over phone lines and back again. Similar in concept to acoustic modems, they allow deaf individuals to converse over phone lines by typing.

To use this disk, an acoustic coupler must be connected to the parallel [sic] port, and an optional interface may be hooked up to the phone line for auto-dialing. The documentation includes detailed drawings.

The program allows regular transmission of keyboard input, has both auto-dialing (for 26 numbers) and manual dialing capabilities, can save a conversation to disk file, or transmit a previously composed message file. The system is not modem compatible, as it uses the 5-bit Baudot code and operates at 45.5 baud, but that is sufficient for typing.

* Origin: TBBS - Scarborough Ont (IFNA BoD - Director-At-Large) (148/122)
FidoNet <=> Usenet Gateway {decvax, hao, ihnp4} !noao!asuvax!stjhmc!ddodell

INTRODUCTION

I. GETTING READY

- A. To Test the Printer
- B. Power Switch and Indicator
- C. To Use the Printer
- D. Battery Power

Krown Research, Inc.

The Memory Printer

II. USING YOUR MEMORY

- A. To Make a TDD Call
- B. To Answer a TDD Call
- C. To Make an Operator Call

III. MEMORY

- A. Buffer Capacities
- B. To Store a Message
- C. To Read a Stored Message
- D. To Send a Stored Message
- E. To Store Numbers in the Phone Directory

Instructions

IV. DIRECT CONNECT (Models MP100, MP100A, MP100B, MP100C)

- A. Keyboard Dialing
- B. Area (Directory) Dialing
- C. Tone/Pulse Dialing
- D. Answer/Class Connect Busy Signals

V. EDITING (CHARACTERS OR NUMBERS STORED IN MEMORY)

- A. To Insert Information in a Stored Message
- B. To Delete Information from a Stored Message
- C. To Clear (Erase) a Buffer

VI. AUTO ANSWER AND REMOTE MESSAGE RETURNAL (Direct Connect Models)

- A. To Activate Auto Answer
- B. To Activate Remote Message Returnal
- C. To Activate Record Check

VII. OPERATION IN THE PHONE

XI. MISCELLANEOUS INFORMATION

- A. Commonly used TDD Abbreviations
- B. Special-TDD/TTY Operator Services
- C. FCC Required Information
- D. Specifications



INTRODUCTION	1
I. GETTING STARTED	6
A. To Set Up your <i>Memory Printer</i>	
B. Power Switch and Indicator Lights	
C. To Use the Printer	
D. Battery Power	
II. USING YOUR <i>Memory Printer</i> TO CALL ANOTHER TDD	8
A. To Make a TDD Call	
B. To Answer a TDD Call	
C. To Make an Overseas Call	
III. MEMORY	10
A. Buffer Capacities	
B. To Store a Message	
C. To Read a Stored Message	
D. To Send a Stored Message	
E. To Store Numbers in the Phone Directory	
IV. DIRECT CONNECT (Models MP20D, MP20D/A, MP40D, MP40D/A) .	13
A. Keyboard Dialing	
B. Auto (Directory) Dialing	
C. Tone/Pulse Dialing	
D. Acoustic/Direct Connect Mode Selection	
V. EDITING (CHANGING) INFORMATION STORED IN MEMORY ...	16
A. To Insert Information in a Stored Message	
B. To Delete Information from a Stored Message	
C. To Clear (Erase) a Buffer	
VI. AUTO ANSWER AND REMOTE MESSAGE RETRIEVAL	19
(Direct Connect Models)	
A. To Activate Auto Answer	
B. To Activate Remote Message Retrieval	
C. Time/Date Record Option	
VII. LOADING PAPER IN THE PRINTER	22
VIII. "ASCII" FEATURE (Models MP20/A, MP20D/A, MP40D/A)	24
IX. TAKE YOUR <i>Memory Printer</i> WITH YOU	25
X. SERVICE INFORMATION	26
A. Helpful Hints About Using Your TDD	
B. Trouble Shooting	
C. Warranty Information	
XI. MISCELLANEOUS INFORMATION	27
A. Commonly used TDD Abbreviations	
B. Special TDD/TTY Operator Services	
C. FCC Required Information	
D. Specifications	

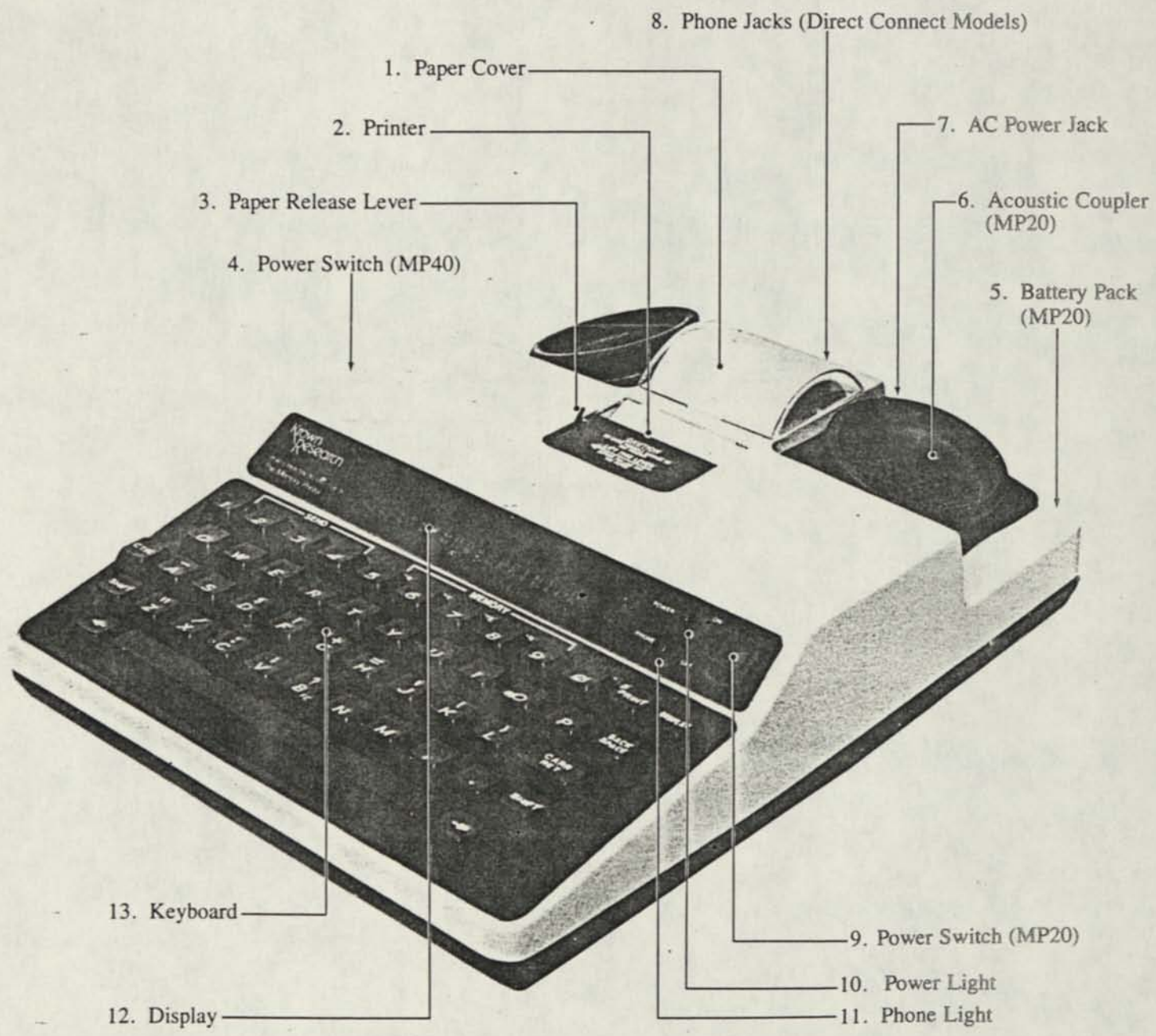
INTRODUCTION

Congratulations! You now have the state-of-the-art Telecommunications Device for the Deaf. The *Memory Printer* is user-friendly, easy to use, completely portable, and gives you features that no other TDD has. It has a built-in printer, and easy-to-use four-row keyboard.

To use your *Memory Printer* just turn the Power Switch ON. The unit is ready to make and receive calls like any other TDD that you already use.

This manual is written so that you can use the *Memory Printer* at once while you get acquainted with the many modern features it offers. Step by step instructions give you the basics to get started. The special functions can be learned at your leisure. Take your time, study the keys and features, and follow the easy instructions to learn each feature.




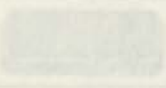
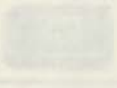








1. **Paper Cover:** Protects the roll of paper.
2. **Printer:** The thermal printer records your calls.
3. **Paper Release Lever:** Holds the paper between the print head and the platen.
4. **Power Switch (MP40):** Turns the *Memory Printer* on and off.
5. **Battery Pack (MP20):** Auxiliary power source contains the battery, connector and cover.
6. **Acoustic Coupler:** Connects your telephone handset to the *Memory Printer*.
7. **AC Power Jack:** Connects the *Memory Printer* to the AC charger/adaptor.
8. **Phone Jacks:** In direct connect models, connects the *Memory Printer* to the telephone wall jack and your telephone set.
9. **Power Switch (MP20):** Turns the *Memory Printer* on and off.
10. **Power Light:** Indicates the *Memory Printer* is ON when lit. If this light blinks on and off (BRIGHT-dim-BRIGHT-dim), it indicates that the battery needs recharging.
11. **Phone Light:** Shows you the sounds on the telephone line. A steady glow indicates a dial tone. Slow flashing indicates a ring; rapid flashing indicates a busy signal.
12. **Display:** 20-character blue/green fluorescent display. The Model MP40 features a 32-character display.
13. **Keyboard:** 48 key, 4-row keyboard controls all typing, automatic and memory functions.

Most of the keys on your *Memory Printer* will be standard, but some are special and easily identified.










SPECIAL FUNCTION KEYS

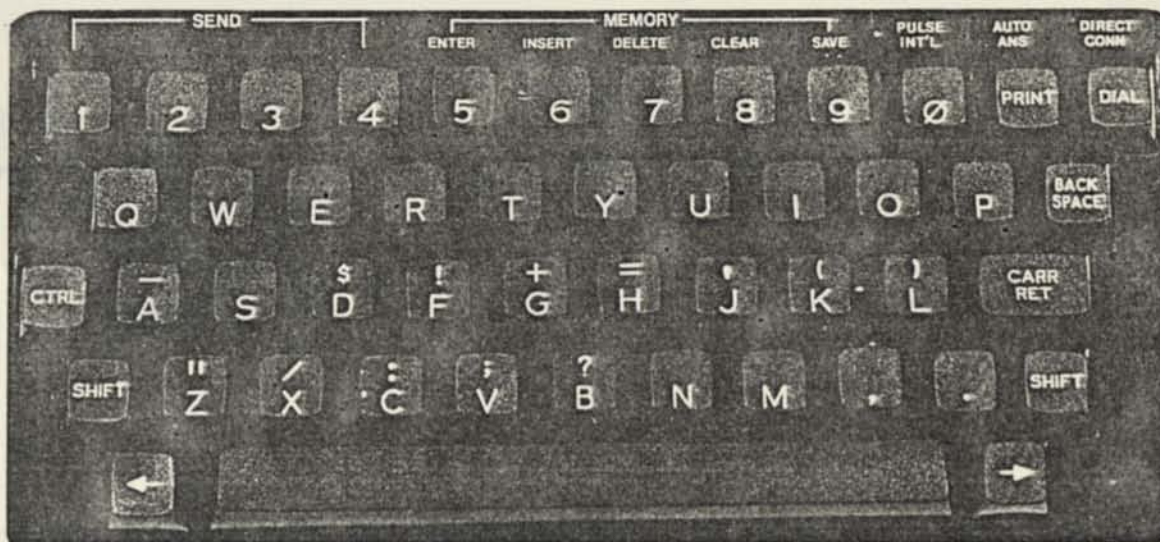
Key	Name	Function
	CONTROL	Used in conjunction with other keys to perform a task or act in a particular manner. Can be depressed and held while another key is depressed.
	SHIFT	Controls the typing of an upper case letter shown on the key. (Only upper case letters will appear on the display.)
	CURSOR KEYS	Moves the cursor to the left and right for deleting and editing stored text.
	SPACE BAR	Moves the cursor one space Forward.
	CARRIAGE RETURN	Signals the printer or a TTY to begin a new line. Also used to advance the paper.
	BACKSPACE	Moves the cursor one space Backwards.
	DIAL	Allows you to call a phone number typed on the keyboard or stored in the Directory. (MP20D, MP20DA, MP40D, MP40DA)
	DISPLAY	Changes the direction of display roll-over. (MP20 only).
	PRINT	Turns the printer OFF and ON.



Most of the keys on your *Memory Printer* are the same as the keys used on a typewriter, but some are special and easily identified and understood.

SPECIAL FUNCTION KEYS

Key	Name	Function
	CONTROL	Used with another key to tell the <i>Memory Printer</i> to perform a task or set a particular feature. The key must be depressed and held while another key is depressed.
	SHIFT	Controls the typing of an upper case figure shown on the key. (Only upper case letters will appear on the display.)
	CURSOR KEYS	Move the cursor to the left and right for reading and editing stored text.
	SPACE BAR	Moves the cursor one space Forward.
	CARRIAGE RETURN	Signals the printer or a TTY to begin a new line. Also used to advance the paper.
	BACKSPACE	Moves the cursor one space Backwards.
	DIAL	Allows you to call a phone number typed on the keyboard or stored in the Directory. (MP20D, MP20D/A, MP40D, MP40D/A)
	DISPLAY	Changes the direction of display read-out (MP20 only).
	PRINT	Turns the printer OFF and ON.



KEYS WHICH FUNCTION WITH THE CONTROL KEY

Key	Name	Function
	MEMORY BUFFERS	Prestored messages save you time typing. Buffer 3 is for the Auto Answer message.
	ENTER	Gives you access to the memory buffers.
	INSERT	Inserts characters into a stored message without having to retype the entire text.
	DELETE	Deletes character above the cursor.
	CLEAR	Used to erase the contents of an entire memory buffer or the phone directory.
	SAVE	Stores the text entered into memory. Also used to exit the memory function and to clear the line when in Direct Connect.
	PULSE INT'L	Used to change the <i>Memory Printer</i> to International (50 Baud) Operation and to select Pulse or Tone dial, when available. (Models MP20D, MP20D/A, MP40D, MP40D/A)
	PRINT	Activates the Auto Answer feature or Turns Off the Auto Answer.
	CURSOR KEYS	Activates constant forward or backward scrolling while reading or editing a stored text.
	BACKSPACE	Activates ASCII mode or changes back to Baudot TDD mode. (Models MP20/A, MP20D/A, MP40D/A).
	DIAL	Used to select acoustic or direct connect mode. (Models MP20D, MP20D/A, MP40D, MP40D/A)

Note: The CONTROL and function keys must be depressed at the same time. Hold the CONTROL key down, depress the function key and then release both keys.

I. GETTING STARTED

A. To Set Up Your *Memory Printer*



Place your *Memory Printer* near your telephone. The power unit is connected to a regular power outlet and the *Memory Printer* is used with your telephone.

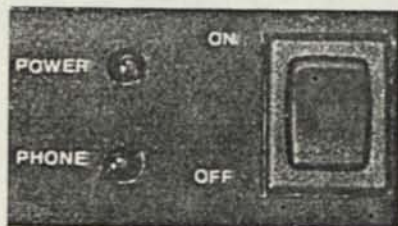


Plug the AC charger/adaptor cord into the jack at the back of your *Memory Printer*. Then plug the AC charger/adaptor into a standard electrical outlet near your phone.

If your *Memory Printer* is equipped with Direct Connect, refer to Part IV for instructions on connecting the unit to the telephone outlet.

B. Power Switch and Indicator Lights

The Power Switch is on the right side of the display in Model MP20. In the Model MP40, it is located on the left side of the unit.



- Turn the Power Switch ON.
 - The Power Light glows red.
 - "MP20 POWER ON" is displayed.*

Your *Memory Printer* is now ready to communicate with a TTY/TDD that operates in Baudot. The acoustic coupler in the *Memory Printer* is activated.

The Phone Light shows you the sounds on your telephone line. A steady glow means you have a dial tone. The light will flash slowly if the phone rings, and fast if the line is busy. It will also indicate voices when someone speaks on the telephone.

*The *Memory Printer* power-on message may vary slightly. Some distribution outlets or TDD programs have custom pre-programmed messages, such as: "AT&T MP20D" or "BVR MP20 POWER ON."

In the models with Direct Connect, the display reads "MP20D-POWER ON" when in acoustic mode and "MP20-DIRECT CONNECT" when using Direct Connect. Also, in the Model MP40, the display reads "MP40" in place of "MP20."

C. To Use the Printer

The *Memory Printer* has a built-in printer to print your calls. The printer is automatically ON. Your outgoing messages will be printed in lower case (small) letters. All incoming messages will be printed in upper case (capital) letters.

To turn the Printer OFF

- Press PRINT
 - "PRINTER IS OFF" is displayed.
 - The *Memory Printer* operates without printing.

To turn the Printer ON

- Press PRINT
 - "PRINTER IS ON" is displayed.

D. Battery Power

Your *Memory Printer* is designed to operate from battery or AC (house electricity) power. (Battery power is optional in Model MP40.) To use battery power, unplug the AC charger/adaptor from the unit.

The Ni-cad battery will operate for approximately two hours when fully charged. To help the battery last longer, let it run down until the Power Light starts to flash BRIGHT-dim-BRIGHT-dim. This means that the battery is running down and needs recharging.

It is suggested that you use the *Memory Printer* with battery power in a regular cycle. That is, operate the unit on battery power until it needs recharging. Then recharge the battery by plugging in the AC charger/adaptor for 12 to 14 hours. (The unit must be turned OFF in order to recharge.) Unplug the unit and again use the battery power.

The battery should last for about three years when used in this cycle. (Refer to Part IX for additional information on battery power.)

IMPORTANT NOTE:

The *Memory Printer* Model MP20D operates in either direct connect (modular jack) or acoustic mode (rubber coupler). To select the mode desired, hold down the CONTROL key and press the DIAL key. Repeat until the desired mode is displayed.

II. USING YOUR *Memory Printer* TO CALL ANOTHER TDD

A. To Make a TDD Call

- Turn the Power Switch ON.
 - "MP20 POWER ON" is displayed.
- Place your telephone handset firmly into the acoustic cups.
 - Be sure that the cord is to the LEFT.
 - Skip this step when using Direct Connect.
- Check the Phone Light.
 - When the light glows steady, you have a dial tone and can now dial your call from your telephone set.
- Dial the number you are calling.
 - The phone light will show you when the phone is ringing.
 - Slow flashing = ring; rapid flashing = busy.

When the called party answers and types a message followed by "GA", begin typing your message. Type "GA" for "Go Ahead" to let the other person know it is his/her turn to type to you.

To end the conversation

- Type "SK" for "Stop Keying".
 - When both parties have typed "SK", your conversation is over.
 - When you want to tell the other party you have said all you have to say, you can type "GA OR SK" which informs them to close the conversation when they have finished.
- Place the telephone handset back on the phone.
- Turn your *Memory Printer* OFF.

B. To Answer a TDD Call

- Turn the Power Switch ON.
 - "MP20 POWER ON" is displayed.
- Place your telephone handset firmly into the acoustic cups.
 - Be sure that the cord is to the LEFT.
 - Skip this step when using Direct Connect.
- Type an answer message.
 - Example: "HELLO. THIS IS RALPH. GA"
 - "GA" for "Go Ahead" tells the other person that it is his/her turn to type to you.
 - When both parties have finished the conversation using "SK SK" the conversation is over.
- Place your telephone handset back on the phone.
- Turn your *Memory Printer* OFF.

III. MEMORY

C. To Make an Overseas Call

If you want to place a call outside the United States or Canada, you may need to communicate in the International (50 Baud) TDD Code.

To Select International TDD Code

- Press CONTROL and 0(PULSE/INT'L).
 - "INT'L SPEED? Y/N" is displayed.
- Press "Y" for Yes.
 - "INT'L ON" is displayed.
 - The *Memory Printer* operates at 50 Baud.

In models with Direct Connect, a second prompt for Pulse Dial is displayed after responding to the first prompt.

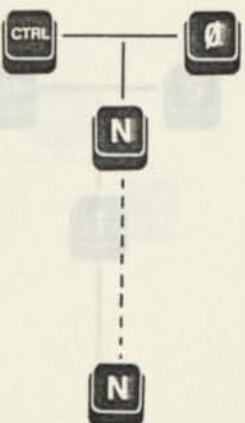
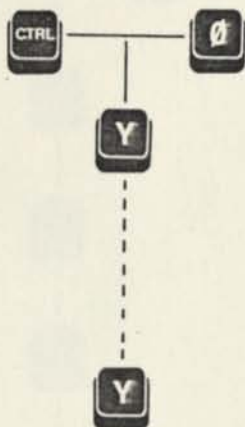
- "PULSE DIAL? Y/N" is displayed.
- Press "Y" for Yes to select Pulse Dial.
 - "INT'L ON, TONE OFF" is displayed.
 - The *Memory Printer* operates at 50 Baud with Pulse Dial.

To Return to U.S./Canada (45 Baud) TDD Code

- Press CONTROL and 0(PULSE/INT'L).
 - "INT'L SPEED? Y/N" is displayed.
- Press "N" for No.
 - "INT'L OFF" is displayed.
 - The *Memory Printer* operates at 45 Baud.

In models with Direct Connect, a second prompt for Pulse Dial is displayed after responding to the first prompt.

- "PULSE DIAL? Y/N" is displayed.
- Press "N" for No.
 - "INT'L OFF, TONE ON" is displayed.



Note to Hearing People: You can recognize an incoming TDD call in two ways. If the caller is tapping the spacebar to announce a TDD call, you will hear a series of electronic beeps when you pick up the phone. If the caller is not typing or tapping the spacebar, there will be silence on the other end. With experience you will assume a no response to your hello indicates a TDD call. Follow the steps given above.

III. MEMORY

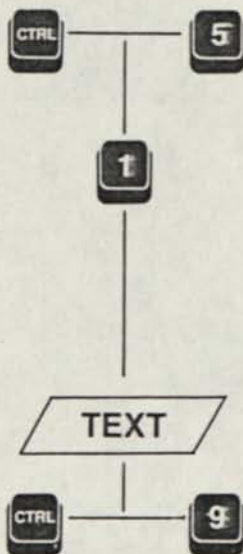
The *Memory Printer* has a 2K (2048 characters) Random Access Memory (RAM). The memory features can save you time by letting you store frequently used messages, prepare a message before making a call to save long distance charges, and to store frequently called numbers (Direct Connect option).

A. Buffer Capacities

The memory is divided into the following six blocks:

- Memory Buffer # 1 – 32 characters for a short message such as a greeting or a log-on I.D. number.
- Memory Buffer # 2 – 32 characters for a short message such as a greeting or password.
- Memory Buffer # 3 – 256 characters used to store your Auto Answer outgoing message. In models MP20 and MP20/A this buffer can be used like any other message buffer.
- Memory Buffer # 4 – Main buffer holds approximately 1200 characters. This buffer can be used to prepare a message before making a call.
- Memory Buffer # 5 – Overflow buffer stores all outgoing and incoming data.
- Phone Directory – 9 locations of 24 characters each to store frequently called numbers plus 1 password buffer. (Not available on MP20 and MP20/A models.)

B. To Store a Message



- Press CONTROL and 5(ENTER).
 - "MEM 1-5" is displayed.*
 - Select the buffer number (1-5) where you want to store the message.
- Press selected buffer (Ex. "1").
 - "M1" for "Memory Buffer 1" is displayed on the right.
 - The MP40 features a character counter on the extreme right of the display to show you the number of characters entered into the buffer. Because of this added feature, the buffer number is not displayed after "M".
 - When the buffer is full on Model MP40, "F" for Full is displayed in the character counter.
- Type the message to be stored (Ex. "HELLO. THIS IS RALPH. GA").
 - The message is displayed as it is typed.
- Press CONTROL and 9(SAVE).
 - The display is cleared.
 - The message is stored.

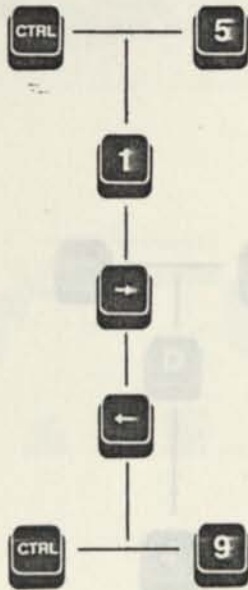
*In models with Direct Connect, the display reads "MEM 1-5 OR D(DIR)".

D. To Send a Stored Message

- Press CONTROL and the buffer number when a message is stored (Ex. "1").

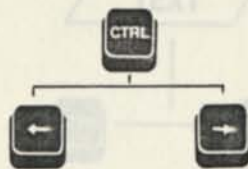
C. To Read a Stored Message

It is possible to read a message stored in the memory buffers without changing or sending the text.



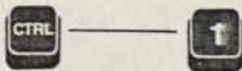
- Press CONTROL and 5(ENTER).
 - "MEM 1-5" is displayed.
 - Select the buffer number of the message you want to read.
- Press selected buffer (Ex. "1").
 - "M1" for "Memory 1" is displayed on the right.
 - The beginning of the message appears in the middle of the display.
- Press the CURSOR KEY on the right side of the Space Bar.
 - The cursor moves to the right one character at a time.
 - The text moves to the left (forward) on the display.
- Press the CURSOR KEY on the left side of the Space Bar.
 - The cursor moves to the left one character at a time.
 - The text moves to the right (backward) on the display.
- Press CONTROL and 9(SAVE).
 - The message is stored.

Moving the text forward or backward is called "scrolling." For continuous scrolling



- Press and hold CONTROL and either CURSOR Key.
 - The text moves continuously across the display.
- Release the CURSOR Key.
 - Scrolling stops.

Number Numbers can be separated with dashes (-). Only numbers will be dialed. Letters and dashes will not affect dialing.
If needed for the operation of special business systems, a pause or delay in dialing can be inserted between numbers. Type a "v" for each one-second delay needed.



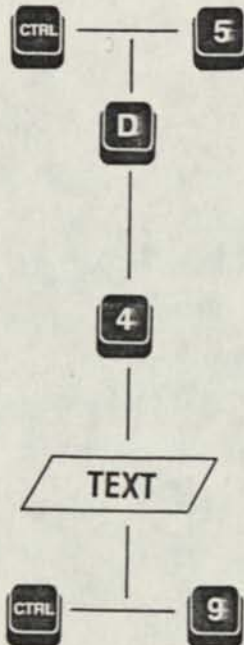
D. To Send a Stored Message

- Press CONTROL and the buffer number where message is stored (Ex. "1").
 - The message is displayed, sent and printed (if the printer is ON).

If necessary, it is possible to interrupt a stored message that is being sent. Press CONTROL and 9. The message stops and is stored.

E. To Store Numbers in the Phone Directory

The Phone Directory is used with Direct Connect (Models MP20D, MP20D/A, MP40D, MP40D/A). Refer to Part IV "Direct Connect Dialing" for instructions on using Auto Dialing.

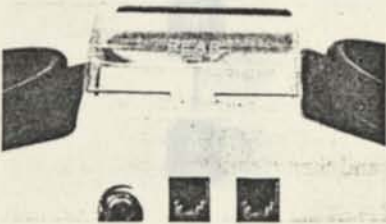
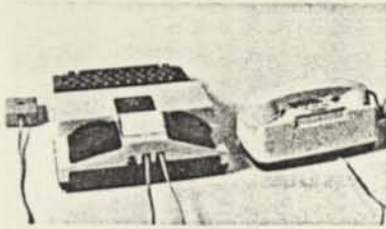


- Press CONTROL and 5(ENTER).
 - "MEM 1-5 OR D(DIR)" is displayed.
- Press "D" for Directory.
 - "TYPE PHONE LOC 0-9" is displayed.
 - Select the Location Number where the number is to be stored. (Location "0" is reserved for storage of a password for use with Remote Message Retrieval.)
- Press the selected Location Number (Ex. "4").
 - "TYPE NAME & NO. NOW" is displayed.
 - The display clears automatically.
 - "D4" for "Directory 4" is displayed on the right side.
- Type the name and phone number to be stored (Ex. "JOHN S. 555-5555").
 - The characters are displayed when typed.
 - You can store up to 24 characters in each buffer.
- Press CONTROL and 9(SAVE).
 - The display clears.
 - The number is stored.

Note: Numbers can be separated with dashes (-). Only numbers will be dialed. Letters and dashes will not affect dialing.

If needed for the operation of special business systems, a pause or delay in dialing can be inserted between numbers. Type a "+" for each one-second delay needed.

IV. DIRECT CONNECT (Models MP20D, MP20D/A, MP40D, MP40D/A)



The Direct Connect feature saves you time and gives you a better connection. You can use your *Memory Printer* without having to place the telephone handset in the acoustic cups (MP20s). It also gives you the option of dialing from the keyboard or from numbers stored in the Phone Directory. (See Part III for information on storing numbers in the Directory.)

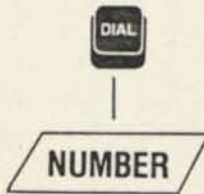
To connect your *Memory Printer* to your telephone line, plug one end of your modular telephone cord into the telephone wall jack. Plug the other end into either jack on the back of your *Memory Printer*. The second jack can be used to connect your telephone set or signaling device to the *Memory Printer*.

After turning the Power Switch ON, it is necessary to press the SPACE BAR or DIAL to connect with the telephone line.

Note: Since Model MP40s do not have built-in acoustic couplers, it will be necessary to purchase a separate acoustic coupler if you wish to have acoustic connect capability.

A. Keyboard Dialing

- Turn the Power Switch ON.
 - "MP20-DIRECT CONNECT" is displayed when in Direct Connect*.
 - If in acoustic mode, the *Memory Printer* will automatically change to and remain in Direct Connect when you press DIAL.
- Press DIAL.
 - The phone light glows steady indicating a dial tone.
 - "TYPE NO. OR M(MEM)" is displayed.
- Type the number you wish to call.
 - The number is displayed and dialed as it is typed.
 - The number is printed if the Printer is ON.



If you make a mistake in dialing

- Press CONTROL and 9
 - The line is cleared.
- Press DIAL.
 - "TYPE NO. OR M(MEM)" is displayed.
 - Retype the number.

*The display reads "MP20D-POWER ON" when in acoustic mode. On the Model MP40, the display reads "MP40" in place of "MP20".

B. Auto (Directory) Dialing

- Turn the Power Switch ON.
 - "MP20-DIRECT CONNECT" or "MP20D-POWER ON" is displayed.
 - If in acoustic mode, the *Memory Printer* will automatically change to and remain in Direct Connect when you press DIAL.
- Press DIAL.
 - The phone light glows steady indicating a dial tone.
 - "TYPE NO. OR M(MEM)" is displayed.
- Press "M" for Memory.
 - "PH (1-9) OR D(DIR)" is displayed.
 - Select the Location Number where the phone number is stored.
- Press the selected Location Number (Ex. "4").
 - "DIALING 555-5555" is displayed and then cleared.
 - The number is dialed.



To display and print the entire Phone Directory

- Press DIAL.
 - "TYPE NO. OR M(MEM)" is displayed.
- Press "M" for memory.
 - "PH (1-9) OR D(DIR)" is displayed.
- Press "D" for Directory.
 - The entire Phone Directory is displayed and printed (if the Printer is ON).
 - "PH (1-9), K(KEYBD)" is displayed.
 - To place a call, select either a buffer number or "K" for Keyboard Dialing.



V. EDITING (CHANGING) INFORMATION STORED IN MEMORY

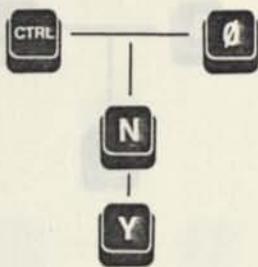
A stored message or number can be edited or changed without retyping the stored message. The *Memory Printer* has INSERT and DELETE functions.

C. Tone/Pulse Dialing

Telephone companies offer both pulse and tone dialing. The *Memory Printer* will use tone dialing unless you change the mode. Most tone dialing services will accommodate rotary (pulse) dialing, but not vice versa.

To set the *Memory Printer* for pulse dialing

- Press CONTROL and 0 (INT'L/PULSE).
 - "INT'L SPEED? Y/N" is displayed.
- Press "N" for No.
 - "PULSE DIAL? Y/N" is displayed.
- Press "Y" for Yes.
 - "INT'L OFF, TONE OFF" is displayed.

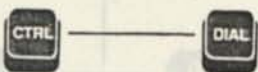


D. Acoustic/Direct Connect Mode Selection

The *Memory Printer* will automatically select Direct Connect mode when you activate the DIAL (Keyboard or Auto Dialing) or AUTO ANSWER features. The *Memory Printer* will remain in the mode (Acoustic or Direct Connect) you select until you change it.

To Change Modes

- Press CONTROL and DIAL (DIRECT CONN).
 - "ACOUSTIC MODE" or "DIRECT CONNECT" is displayed.
 - The *Memory Printer* will operate in the new mode.
- The *Memory Printer* stores the selected dial mode in memory. Therefore, it is not necessary to change the dial mode if you want to use the mode previously selected.



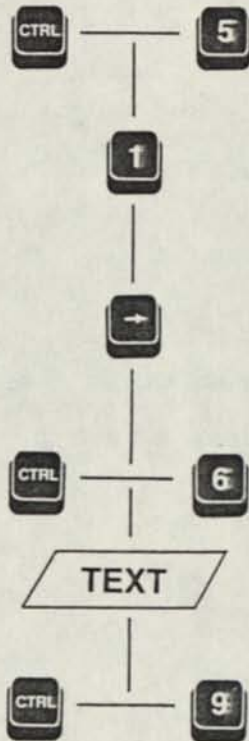
Note: When in Direct Connect it is possible to make several phone calls without turning the *Memory Printer* OFF between each call. To clear the line (disconnect) between calls, press CONTROL and 9. The *Memory Printer* is then ready for you to make another call.

V. EDITING (CHANGING) INFORMATION STORED IN MEMORY

A stored message or number can be edited or changed without retyping the stored information by using the INSERT and DELETE functions.

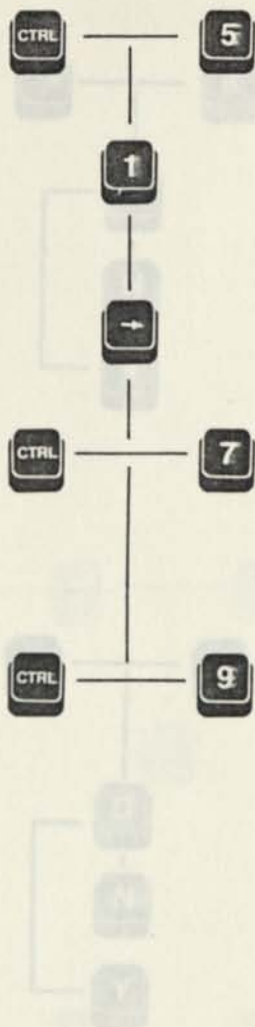
To completely change a message, simply type over the old information or use the CLEAR function. The Space Bar and Back Space keys can be used to delete any characters.

A. To INSERT Information in a Stored Message



- Press CONTROL and 5(ENTER).
 - "MEM 1-5" is displayed.
 - Select the buffer to be edited.
- Press the selected buffer (Ex. "1").
 - "M1" is displayed on the right.
 - The beginning of the message appears in the middle of the display. (Ex. "HELLO. THIS IS RALPH. GA")
- Press the CURSOR KEY to the right of the Space Bar.
 - The cursor moves one character to the right and the text moves to the left.
 - Position the cursor to the point where new text is to be inserted. (Ex. on the period following "RALPH.")
- Press CONTROL and 6(INSERT).
 - "I1" for Insert and the buffer number is displayed on the right.
- Type the information to be inserted. (Ex. "HERE.")
 - The text is displayed as typed. (Ex. "HELLO. THIS IS RALPH HERE. GA")
- Press CONTROL and 9(SAVE).
 - The display is cleared.
 - The edited message is stored.

B. To DELETE Information from a Stored Message



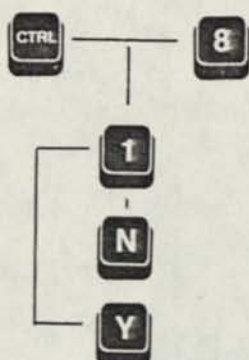
- Press CONTROL and 5(ENTER).
 - "MEM 1-5" is displayed.
 - Select the buffer to be edited.
- Press the selected buffer (Ex. "1").
 - "M1" is displayed on the right.
 - The beginning of the message appears in the middle of the display. (Ex. "HELLO. THIS IS RALPH HERE. GA")
- Press the CURSOR KEY to the right of the Space Bar.
 - Position the cursor at the point where text is to be deleted. (Ex. after "HELLO.")
- Press CONTROL and 7(DELETE).
 - The character above the cursor is deleted.
 - It is necessary to press CONTROL and 7 for each character that is to be deleted. (Ex. Depress and hold CONTROL. Then press 7(DELETE) seven times to delete "THIS IS".)
 - "HELLO. RALPH HERE. GA" is displayed.
- Press CONTROL and 9(SAVE).
 - The display is cleared.
 - The edited message is stored.

If you wish to change only one number in the Directory, follow the instructions for editing a stored text.

*In models with Direct Connect, the display reads "CLR MEM 1-5, D[O]UBT".

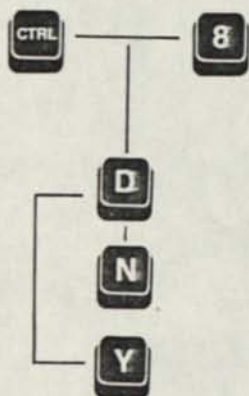
C. To CLEAR (Erase) a Buffer

To CLEAR an entire memory buffer



- Press CONTROL and 8(CLEAR).
 - "CLR MEM 1-5" is displayed.*
 - Select the buffer to be cleared.
- Press the selected buffer (Ex. "1").
 - "CLEAR 1 ? Y/N" is displayed.
 - If you do not want to clear the buffer, select "N" for No.
 - The message remains stored.
- Press "Y" for Yes to CLEAR the buffer.
 - The buffer is cleared.
 - "M1" is displayed on the right.
 - A new message can be entered and stored. If you do not wish to store a new message, press CONTROL and 9.

To CLEAR the entire Phone Directory



- Press CONTROL and 8(CLEAR).
 - "CLR MEM 1-5" is displayed.
 - Select "D" for Directory.
- Press "D"
 - "CLEAR DIR.? Y/N" is displayed.
 - If you do not want to clear the ENTIRE directory, select "N" for No.
 - The Directory remains stored.
- Press "Y" for Yes to CLEAR the entire directory.
 - The entire Phone Directory is cleared.
 - "TYPE PHONE LOC 0-9" is displayed.
 - New phone numbers can be entered and stored. If you do not wish to store a new phone number, press CONTROL and 9.

If you wish to change only one number in the Directory, follow the instructions for editing a stored text.

*In models with Direct Connect, the display reads "CLR MEM 1-5, D(DIR)".

VI. AUTO ANSWER AND REMOTE MESSAGE RETRIEVAL (Direct Connect Models)

Models equipped with Direct Connect have a built-in answering machine to answer your calls when you are away. To use Auto Answer, the Printer must be ON and you must have stored an answer message in memory buffer 3. (Refer to instructions in Part III.)

Example: HELLO. THIS IS JOHN'S ANSWERING MACHINE. PLEASE TYPE YOUR NAME AND PHONE NUMBER AND I WILL RETURN YOUR CALL. GA

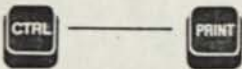
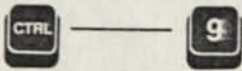
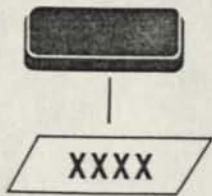
A. To Activate Auto Answer

- Connect your *Memory Printer* to the AC charger/adaptor.
 - Make sure you have plenty of paper.
 - Turn the Power Switch ON.
 - "MP20-DIRECT CONNECT" or "MP20D-POWER ON" is displayed.
 - If your unit is in Acoustic Connect, the *Memory Printer* will automatically switch to and remain in Direct Connect when you press CONTROL and PRINT.
 - Press CONTROL and PRINT.
 - "NO. OF RINGS (1-9)" is displayed.
 - Select the number of times you want your phone to ring before it is answered.
 - Type the number selected (Ex. "2").
 - "AUTO ANSWER ON" is displayed.
 - Your incoming calls will be answered, printed and stored in memory buffer 5.
- The *Memory Printer* can also answer ASCII calls (Models MP20D/A, MP40D/A). After selecting the number of rings, a second prompt asks if you want ASCII calls answered.
- "ANSWER ASCII? Y/N" is displayed.
 - Selecting "Y" for Yes will set the *Memory Printer* to automatically answer both ASCII and Baudot.
 - "AUTO ANSWER ON" is displayed.
 - The unit will answer the phone on the selected ring and determine whether the incoming message is 300 Baud ASCII or 45.45 Baud Baudot.

(Refer to Part VIII for additional information on ASCII.)



Note: It is a good idea to CLEAR the contents of buffer 3 before activating Auto Answer. This is to avoid receiving old data stored in the buffer when using Remote Message Retrieval. (Refer to Part VI.)



To answer an incoming call when the Auto Answer is ON

- Press the SPACE BAR once.
 - The Auto Answer is removed.
 - The *Memory Printer* is now "on-line" with the caller.
- Type several X's to let your caller know you are on the line.
 - Proceed with your answer.
- Press CONTROL and 9 to disconnect after your conversation.
 - The line is cleared.
 - Auto Answer remains activated, ready to answer calls.
 - "Auto Answer On" is displayed.

To Turn the Auto Answer OFF

- Press CONTROL and PRINT.
 - "AUTO ANSWER OFF" is displayed.

B. To Activate Remote Message Retrieval

The Remote Message Retrieval feature lets you retrieve your messages while away from home. To use this feature, you must first store a password in location "0" of the Phone Directory. (See instructions in Part III.)

To Retrieve Your Messages

- Dial your number.
 - Auto Answer will answer typing the message.
- Type your password after the message is finished.
 - All of your messages will be sent to you.

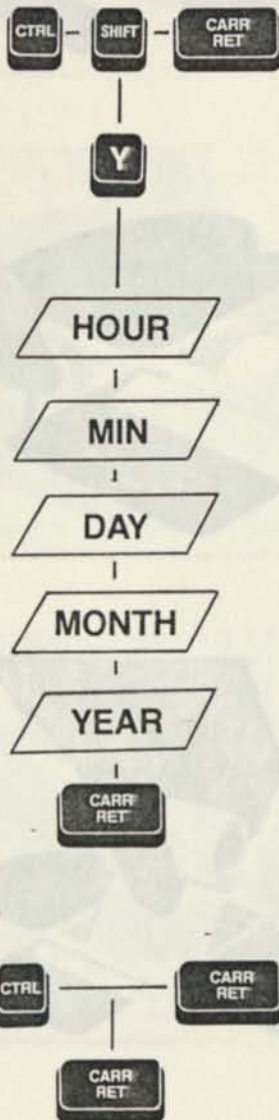
Note: It is a good idea to CLEAR the contents of buffer 5 before activating Auto Answer. This is to avoid receiving old data stored in the buffer when using Remote Message Retrieval. (Refer to Part V.)

VII. LOADING PAPER IN THE PRINTER

OPTIONAL FEATURE: Time/Date Record

The Time/Date Record prints the time and date for each message that is received.

To Set the Clock and Calendar



- Press CONTROL, SHIFT and CARRIAGE RETURN.
 - The current time and date are displayed and then cleared.
 - "SET CLOCK? Y/N" is displayed.
- Press "Y" for Yes.
 - "HOUR 01-12" is displayed.
- Type the correct 2-digit HOUR.
 - "PM? Y/N" is displayed.
- Type "Y" for Yes.
- Type the correct 2-digit MINUTE.
 - "DAY 01-31" is displayed.
- Type the correct 2-digit DAY.
 - "MONTH 01-12" is displayed.
- Type the correct 2-digit MONTH.
 - "YEAR 85-99" is displayed.
- Type the correct YEAR.
 - The time and date are displayed.
- Press CARRIAGE RETURN.
 - Time and Date are printed (if the Printer is ON).

To Display/Print the Time and Date

- Press CONTROL and CARRIAGE RETURN.
 - Time and Date are displayed.
- Press CARRIAGE RETURN.
 - Time and Date are printed (if the Printer is ON).

Note: The time and date as it appears on the display is the current time and date at the time CONTROL and CARRIAGE RETURN was depressed. The display will not be updated to the present time although the clock is operating continuously.

VII. LOADING PAPER IN THE PRINTER

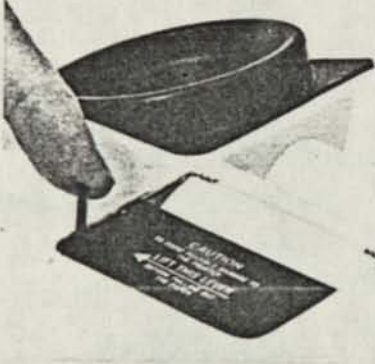
Before you put in a new roll of paper, look at the way the paper is in the machine now. Notice that the paper comes off the **BOTTOM** of the roll and up between the print head and a small black roller called the platen.

To Load More Paper

- Remove the paper cover by pushing it toward the rear of the unit and lifting up.



- Pull the paper release lever forward.



- Remove the old roll of paper by pulling it out from the rear of the unit.



- Hold the new roll of paper so that the paper feeds from the **BOTTOM**.



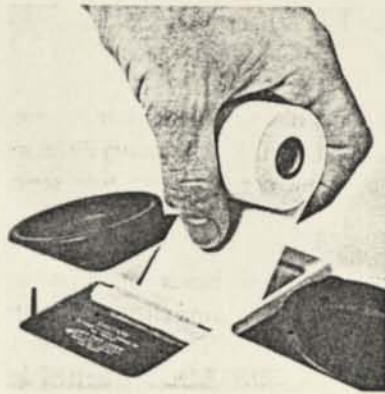
VIII. "ASCII" FEATURE (Models MP20A, MP20DA, MP40DA)

The "ASCII" feature allows you to communicate with computer terminals, local computer users, or TDDs using ASCII Bell 103 modems. Your *Memory Printer* can be used to send many of the printing commands that your computer has been sending.

- Insert the new paper roll by feeding the paper into the well.

The keyboard of the ASCII model was designed so that all Standard and most ASCII characters can be typed. These models have punctuation characters on the top row of eight keys in addition to those on the letter keys. To generate upper case characters in ASCII, it is necessary to press both the CONTROL and SHIFT keys plus a third key.

For those who have purchased the *Memory Printer* with ASCII, a special booklet is provided which outlines this feature.



- Feed the paper until it comes up between the platen and printer head. Continue feeding until the paper comes up through the paper cutting window.

- Push the paper release lever back.
 - Place the roll of paper in the paper well.

- Replace the plastic cover on the machine.

Note: The *Memory Printer* does not use any ink or ribbon. Instead it uses special paper that prints using heat. This paper is called "thermal printing paper". Your *Memory Printer* will not work with any other kind of paper.

Paper Reorder: To insure that you receive the highest quality thermal printing paper, order from KROWN RESEARCH or your local Krown Distributor.

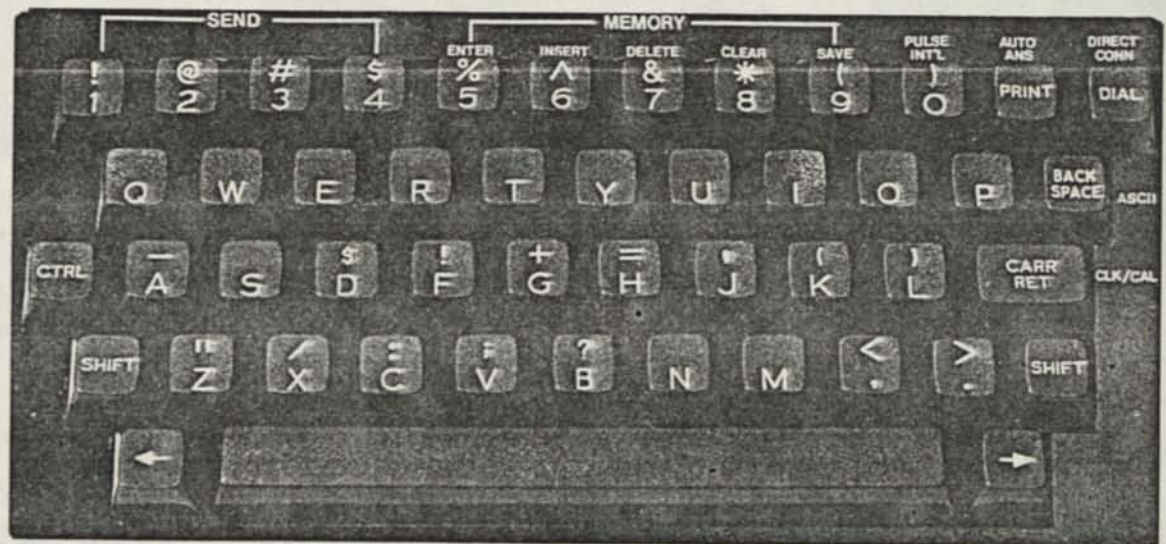
Thermal paper is also available through calculator or business machine stores. The Model MP20 will accept either 2 $\frac{3}{8}$ " or 2 $\frac{1}{4}$ " paper. The Model MP40 will accept either 4 $\frac{3}{8}$ " or 4 $\frac{1}{4}$ " paper. Be sure to ask for thermal calculator paper.

VIII. "ASCII" FEATURE (Models MP20/A, MP20D/A, MP40D/A)

The "ASCII" feature allows you to communicate with computer terminals, home computer users, or TDDs using ASCII Bell 103 modem. Your *Memory Printer* can be used to call many of the growing number of public computer data base services to which you can subscribe.

The keyboard of the ASCII model was designed so that all Baudot and most ASCII characters can be typed. These models have punctuation characters on the top row of digit keys in addition to those on the letter keys. To generate upper case characters in ASCII, it is necessary to press both the CONTROL and SHIFT keys plus a third key.

For those who have purchased the *Memory Printer* with ASCII, a special booklet is provided which outlines this feature.



IX. TAKE YOUR *MEMORY PRINTER* WITH YOU

The MP20 can operate from battery power, making your unit completely portable. (This is an optional feature in the MP40.) To use battery power, unplug the AC charger/adaptor from the unit.

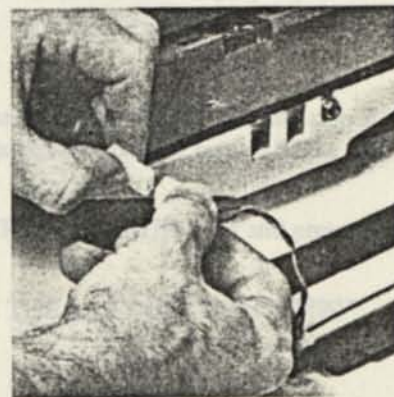
When the batteries are fully charged, the *Memory Printer* will operate for about two hours. The batteries will automatically recharge whenever the unit is plugged into the AC charger/adaptor and the unit is turned OFF.

If you are using your memory Printer on battery power and the red Power Light starts to flash on and off (BRIGHT-dim-BRIGHT-dim), this shows that the battery needs recharging. The light will flash for several minutes. Then the *Memory Printer* will stop working. When this happens, you must change over to AC power (house electricity) to continue using your machine until you recharge the battery.

It is suggested that you use the *Memory Printer* with battery power in a regular cycle. That is, operate the unit on battery power until it needs recharging. Then recharge the battery by plugging in the AC charger/adaptor for 12 to 14 hours. (The unit must be turned OFF in order to recharge.) Unplug the unit and again use battery power. When used regularly in this cycle, the battery should last for about three years.

The replaceable, sealed battery pack is a single unit which contains the battery, connector and cover. This unit is located on the underside of the *Memory Printer* at the back of the unit. Replacement battery packs are available from Krown Research or your local Krown Distributor.

To replace the battery pack, depress the thumb notch in the center of the cover and slide the unit to the back of the *Memory Printer*. Carefully unplug the connector. Replace with a new battery pack unit.



C. Warranty Information

The KROWN RESEARCH *Memory Printer* is covered for one full year from the date of purchase against defects in materials and workmanship. Fill out and return your warranty card as soon as possible.

X. SERVICE INFORMATION

A. Helpful Hints About Using Your TDD

- Be sure to turn your unit OFF when not in use.
- Keep your unit from extreme temperatures—hot or cold.
- Avoid dropping or jarring the unit as electronic devices are delicate instruments.
- Keep the unit as dust-free as possible. (Dust covers are available from Krown Research.)
- When travelling by air, carry your *Memory Printer* on as hand luggage. As a precaution, ask for a visual inspection rather than allowing the unit to be X-rayed. DO NOT CHECK IT AS BAGGAGE.
- If you are having trouble transmitting and receiving messages, check to be certain that your telephone cord is to the LEFT.
- Never run the printer without paper or with the paper release lever up.
- Always end your typed message with letters only ("GA" or "SK"). Do not use figures or punctuation as this may cause confusion on some TDD/TTY models. Punctuation used before "GA" or "SK" should not cause any problems.

B. Trouble Shooting

Q. Sometimes when talking to a friend with an old TDD I get only numbers and no message.

A. This means that the other unit is in FIGURES mode. Press the "X" key several times. After the other person changes from the FIGURES mode to LETTERS mode, resend.

Q. My *Memory Printer* is turned ON but nothing happens!

A. If connected through the Acoustic Coupler, be sure the telephone cord is to your LEFT. Check the AC charger/adaptor to make sure it is properly connected to the *Memory Printer*.

Q. My printer won't print.

A. The thermal paper must be installed in the printer so that the thermal side is out, against the print head(s). Bring the paper up from the bottom of the roll to get the paper in the right direction.

To test the printer, hold down both the CONTROL and SHIFT keys and press the PRINT key. A test message prints:

"THE QUICK BROWN FOX JUMPS OVER THE LAZY DOG 1234567890"

To end the test, depress CONTROL and 9.

C. Warranty Information

The KROWN RESEARCH *Memory Printer* is covered for one full year from the date of purchase against defects in materials and workmanship. Fill out and return your warranty card as soon as possible.

XI. MISCELLANEOUS INFORMATION

A. Commonly used TDD Abbreviations

Users of TDDs often abbreviate commonly used words or expressions to save time. The following abbreviations are a sampling of those most frequently used.

ANS	Answer	R	Are
CUD	Could	REC	Receive
GA	Go Ahead	SK	Stop Keying
LTR	Letter	THRU	Through
MSG	Message	THX	Thank you
MIN	Minute	U	You
NITE	Night	UR	Your
PLS	Please	WUD	Would
QQ	Question	XOX	Hugs & Kisses

B. Special TDD/TTY Operator Services

(800) 855-1155

This special toll-free operator number can help you with:

- credit card calls
- collect calls
- third party telephone calls
- person to person calls
- calls from a hotel or motel
- calls from a coin phone (for collect, third party or credit card calls)

The TDD operator can also help you to:

- reach a number you have a problem getting
- get a number you cannot locate in the telephone book
- get credit on any misdialed numbers
- report any problem with your telephone

Ask your telephone company for the booklet which tells you how to use TDD/TTY operator services.

Kyrus Research, Inc., 10371 W. Jefferson Blvd., Culver City, CA 90232

C. FCC Required Information

Your *Memory Printer* has been granted a registration number by the Federal Communications Commission under Part 68 Rules and Regulations for direct connection to the telephone lines. The FCC requires that you be advised of the requirements involved with owning a telecommunications device.

1. Connect your *Memory Printer* to the nationwide telephone network through a telephone company-provided registered jack.

Your *Memory Printer* cannot be plugged into a party line or directly connected to coin telephone service. You must use the acoustic coupler in these instances.

2. Before connecting your *Memory Printer*, the FCC requires that you notify your local phone company Business Office. Call or write your TDD operator. The phone number and address is in the front of your phone book.

Your phone company will want to know:

- Your phone number
- Product name: Krown Research *Memory Printer*
- FCC registration number: BG487D-71481-DT-E
- Ringer equivalence: 0.4A 0.7B
- Jack: RJ11 RJ13

The FCC requires that you notify your local telephone company when you move your phone permanently.

3. Repairs may be made only by Krown Research or authorized Krown service agencies. This applies at any time during or after warranty. If such unauthorized repair is performed, registration, connection to the telephone lines and the remainder of warranty period all become null and void.

4. If your *Memory Printer* causes harm to the telephone network, the telephone company may temporarily discontinue your service. If possible, they will notify you in advance. But if advanced notice is not practical, you will be notified as soon as possible. You will be given the opportunity to correct the situation, and you will be informed of your right to file a complaint with the FCC.

5. Your telephone company may make changes in its facilities, equipment, operations or procedures that could affect the proper functioning of your *Memory Printer*. If changes occur, you will be notified in advance to give you an opportunity to maintain uninterrupted service.

Krown Research, Inc., 10371 W. Jefferson Blvd., Culver City, CA 90232

D. Specifications

- **Keyboard**

48 key, 4-row keyboard
14 function keys

- **Display**

MP20:
20 character
Blue/green vacuum fluorescent
5.5mm character height

MP40:
32 character
Blue/green vacuum fluorescent
.25" (6mm) character height
Character counter in edit mode

- **Printer**

MP20:
20-column Thermal Printer
Print speed: 2 lines/second
Receive characters printed in UPPER CASE
Transmit characters printed in lower case
2 $\frac{3}{8}$ " (64mm) wide paper

MP40:
40-column Thermal Printer
Print Speed: 30 characters/second
Receive characters printed in UPPER CASE
Transmit characters printed in lower case
4.4" (112mm) wide paper

- **Communications**

Baudot code, 45.5 Baud
1 start bit, 5 data bits, 1.5 stop bits
International (50 Baud) speed selectable
Acoustically coupled to round and rectangular handsets

- **ASCII Code Modem (MP20A, MP20DA, MP40DA)**

Computer Code - Bell 103 Modem (CCITT Modem optional)
110 and 300 Baud
Half/Duplex
Answer/Originate

- **Memory**

- 2048 (2K) character memory
- Non-volatile
- 5 separate message buffers
- Stores all conversations
- 8192 (8k) character memory option

- **Power**

- MP20:

- AC charger/adaptor: Model 48DT-7
- Heavy duty: 6VDC, 7.5VA
- UL listed

- Canadian Units Use:

- AC charger/adaptor: Model 48-C
- Heavy duty: 9VAC, 13.5VA
- UL/CSA listed

- Ni-Cad re-chargeable battery pack
- Customer replaceable, sealed pack

- MP40:

- AC charger/adaptor: Model 54-C
- Heavy duty: 9VAC, 21VA
- UL listed

- Internal lithium battery for memory back-up
- Optional Ni-Cad battery pack available

- **Physical Dimensions**

- Size: W 9.5" (24.2mm) L 12.5" (32.5mm) H 2.75" (7mm)
- Weight: 5.0 lb. (2.26kg) with batteries

- **Direct Connect/Auto Answer (MP20D, MP40D)**

- Connects the Memory Printer directly to telephone line
- Automatically answers calls
- Changeable auto answer message
- Dual modular RJ-11 jacks eliminate need for modular Y connector
- Memory and keyboard dialing
- Built-in phone directory
- Remote message retrieval
- Optional time/date stamping
- Automatic detection of ASCII or Baudot

- **ASCII Code Modem (MP20/A, MP20D/A, MP40D/A)**

- Computer Code—Bell 103 Modem (CCITT Modem optional)
- 110 and 300 Baud
- Half/Full duplex
- Answer/Originate

THE MEMORY PRINTER

ASCII MODE

CONTENTS

Introduction

1	To Call	3
2	To	8
3	To Check	8
4	Table Specifications	10
5	Memory Printer Specifications	11
6	Glossary	12

**Krown
Research, Inc.**

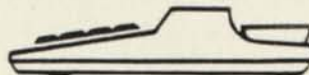
10371 W. JEFFERSON BOULEVARD
CULVER CITY, CALIFORNIA 90232
TELEPHONE (V/TDD)

(213) 839-0181

ORDER LINE:

(800) 833-4968

(800) TDD-4YOU } (Outside California)



"THE PORTA-PRINTER COMPANY"

THE MEMORY PRINTER

ASCII MODE

CONTENTS

Introduction

1	To Make an ASCII Call	3
2	To Answer an ASCII Call	8
3	To Change Settings	9
4	Touble Shooting	10
5	Memory Printer ASCII Specifications	11
6	Glossary of Terms	12

1 TO MAKE AN ASCII CALL

INTRODUCTION

ASCII stands for American Standard Code for Information Interchange. It is the standard communication system used by computers and computer networks, just as Baudot code is the standard for TDOs. With ASCII, you can call computers, computer networks and ASCII TDOs.

To use your Memory Printer to call your friends with computers, your friends will need a modem and communicating software to connect their computers with the telephone lines. If they have ever used their computers to send data or messages by phone, they will already have this equipment.

Before you call people who have computers, tell them the ASCII communication settings to use with your Memory Printer.

7-bit ASCII code
Parity even
300 Baud
Full/half Duplex

In the models with Direct Connect, the display reads "MP200-POWER ON" when in acoustic mode and "MP20-DIRECT CONNECT" when using Direct Connect. Also, in the Model MP40, the display reads "MP40" in place of "MP20".

**At this point the Memory Printer is in ASCII mode. To return to Baudot, you must answer the prompt and then press CONTROL and BACK SPACE. You can also return to Baudot by turning the unit OFF.

ACOUSTIC CONNECT

- o Place the telephone handset in the acoustic coupler.
- o Dial the number from the telephone set.
 - o The phone light will show you when the phone is ringing.
 - o "CARRIER" is displayed when the call is answered.
 - o The phone light will steadily glow red.
- o Begin your conversation.
 - o If you do not receive a clear message, refer to Part 4.

1 TO MAKE AN ASCII CALL

Set up your Memory Printer the same way as you set it up to make TDD calls. Follow the instructions in Part I "Getting Started" of the instruction manual.

- o Turn the Power Switch ON
 - o "MP20 POWER ON" is displayed.*

- o Press CONTROL and BACK SPACE (ASCII).**
 - o "CHANGE MODES? Y/N" is displayed.
 - o Selecting "N" for No. will keep the unit in the following default: 300 Baud, Full Duplex, Originate. To change modes, refer to Part 3.
 - o It is better to set up to "300 Baud, Half Duplex, Originate" for normal conversation. Assume that the answering party is in "Answer" mode. If it is not, set your Memory Printer in "Answer" mode.

*The Memory Printer power-on message may vary slightly. Some distribution outlets or TDD programs have custom pre-programmed messages, such as: "AT&T MP200" or "BVR MP20 POWER ON."

In the models with Direct Connect, the display reads "MP200-POWER ON" when in acoustic mode and "MP20-DIRECT CONNECT" when using Direct Connect. Also, in the Model MP40, the display reads "MP40" in place of "MP20".

**At this point the Memory Printer is in ASCII mode. To return to Baudot, you must answer the prompt and then press CONTROL and BACK SPACE. You can also return to Baudot by turning the unit OFF.

ACOUSTIC CONNECT

- o Place the telephone handset in the acoustic coupler.

- o Dial the number from the telephone set.
 - o The phone light will show you when the phone is ringing.
 - o "CARRIER" is displayed when the call is answered.
 - o The phone light will steadily glow red.

- o Begin your conversation.
 - o If you do not receive a clear message, refer to Part 4.

After your conversation

- o Place the telephone handset back on the phone.
- o Turn your Memory Printer OFF.
 - o Your Memory Printer will be set to communicate in Baudot (TDD) mode when you turn it back ON.

DIRECT CONNECT

- o Plug the telephone cord in the Direct Connect jack. (Refer to Part IV of the Instruction Manual.)
- o Dial the number from the Memory Printer keyboard.
 - o The phone light will show you when the phone is ringing.
 - o "CARRIER" is displayed when the call is answered.
 - o The phone light will steadily glow red.
- o Begin your conversation.
 - o If there is no incoming carrier, the Memory Printer will hang up in 40 seconds.
 - o If you dialed from memory (not the keyboard), the Memory Printer will redial that number and wait 40 seconds for an incoming carrier. If there still no incoming carrier, the Memory Printer will again redial and wait 40 seconds. The unit will automatically hang up if there is no incoming carrier.
 - o "CARRIER LOST" will be displayed and the Memory Printer will hang up.

After your conversation

- o Turn your Memory Printer OFF.
 - o Your Memory Printer will be set to communicate in Baudot (TDD) mode when you turn it back ON.

To make another ASCII call without turning the unit OFF

- o Press CONTROL and 9.
 - o The line is cleared.
 - o The Memory Printer will continue to operate in ASCII mode.

To Disconnect from ASCII without turning the unit OFF

- o Press CONTROL and BACK SPACE (ASCII).
- o "NOT IN ASCII" is displayed.
- o The unit will operate in Baudot.

"CARRIER LOST" will be displayed if the line is disconnected by either party.

Note: When calling data base services, it is a good idea to store your user ID number and password in memory buffers.

Example of Calling a Data Base Service

When calling data base services, it is a good idea to store your user ID number and password in memory buffers.

- o Turn your Memory Printer ON.
 - o "MP20-POWER ON" is displayed.*

To store your user ID number and password

- o Press CONTROL and 5(ENTER).
 - o "MEM 1-5" (model MP20/A) or "MEM 1-5 OR D(DIR)" (model MP20D/A) is displayed.
 - o Select the buffer number where you want to store your user ID number.

- o Press selected buffer (Ex. "1").
 - o "M1" for "Memory Buffer 1" is displayed on the right.

- o Type your user ID number followed by CARRIAGE RETURN.
 - o The number is displayed as it is typed.

- o Press CONTROL and 9(SAVE).
 - o The display is cleared.
 - o The number is stored.

- o Press CONTROL and 5(ENTER).
 - o Select the buffer number where you want to store your password.

- o Press selected buffer (Ex. "2").
 - o "M2" for "Memory Buffer 2" is displayed on the right.

- o Type your password followed by CARRIAGE RETURN.
 - o The password is displayed as it is typed.

- o Press CONTROL and 9(SAVE).
 - o The display is cleared.
 - o The number is stored.

You are now ready to call the data base service.

- o Press CONTROL and BACK SPACE (ASCII).
 - o "CHANGE MODES? Y/N" is displayed.

- o Press "N" for No.
 - o "300 BAUD, FULL, ORIG" is displayed.

- o Dial the data base service number either from the telephone set or by pressing DIAL (models with direct connect).

- o Wait for "CARRIER" to be displayed.
 - o Follow the prompts from the data base service.*

*After "CARRIER" is displayed, you may have to press CONTROL and another key to initiate the prompts. For example, when using "CompuServe", it is necessary to press CONTROL and C before the prompts will be displayed.

2 TO ANSWER AN ASCII CALL

- o Turn the Power Switch ON.
 - o "MP20 POWER ON" is displayed.*
- o Press CONTROL and BACK SPACE (ASCII).
 - o "CHANGE MODES? Y/N" is displayed.
 - o Set your Memory Printer to "300 BAUD, HALF, ANS". Assume that the calling party is in Originate mode. (Refer to Part 3).

ACOUSTIC CONNECT

- o Place the telephone handset in in the acoustic cups.
 - o Be sure that the cord is to the LEFT.
- o "CARRIER" is displayed when the Memory Printer receives the valid carrier.
 - o The phone light will steadily glow red.
- o Begin your conversation.
- o After your conversation, "hang up" by one of the ways described on pages 4 and 5.

DIRECT CONNECT

- o Plug the telephone cord into the direct connect jack.
- o Press the SPACE BAR.
 - o The Memory Printer will be "on line."
- o "CARRIER" is displayed when the Memory Printer receives the valid carrier.
 - o The phone light will steadily glow red.
- o Begin your conversation.
- o After your conversation, "hang up" by one of the ways described on pages 4 and 5.

3 TO CHANGE MODE SETTINGS

- o Turn the Power Switch ON.
 - o "MP20 POWER ON" is displayed.*

- o Press CONTROL and BACK SPACE.
 - o "CHANGE MODES? Y/N" is displayed.

- o Press "Y" for Yes to change the modes.
 - o "HALF DUPLEX? Y/N" is displayed.
 - o Selecting "N" keeps the unit in FULL Duplex.

 - o "300 BAUD? Y/N" is displayed.
 - o Selecting "N" enables 110 Baud Rate.

 - o "ORIGINATE? Y/N" is displayed.
 - o Selecting "N" enables Answer.

- o To change modes while in ASCII, press CONTROL and BACK SPACE twice.

After the three selections have been made, the selected modes are displayed. For example, if all three prompts have been answered with "N", the display will read: "110 BAUD, FULL, ANS".

For normal conversation, it is probably a good idea to use Half Duplex. Also, you should use Half Duplex when calling a terminal without echo.

*see note on Page 3

4 TROUBLE SHOOTING

Communicating in ASCII is more complicated than in Baudot because of the various mode settings. Both machines must be set to the same compatible mode settings. If the settings are incompatible, the messages may be garbled or you may not receive any message at all.

Q. I placed a call to an ASCII TTY, but I didn't get a response.

A. You must change your Memory Printer to 110 Baud rate.

Q. I answered a call but didn't get a response.

A. The call is probably coming from an ASCII TTY. You must change your Memory Printer to 110 Baud rate.

Q. I am calling a computer. Each character that I type appears twice on my display. ("HHII MMAAEE")

A. Your Memory Printer is set at Half Duplex and the computer is set at Full Duplex with echo. You must change to Full Duplex.

Q. I am calling a computer with my Memory Printer set at Full Duplex. When I type, nothing shows on the display.

A. The computer is set at Half Duplex without echo. You must change to Half Duplex.

Q. I am receiving a message that does not make sense. All the characters are incorrect.

A. If you are communicating with a computer, most likely it is not set correctly to communicate with your Memory Printer. The computer must be set to communicate in 7-bit ASCII code with even parity, at 300 baud, in full duplex.

5 MEMORY PRINTER ASCII SPECIFICATIONS

Computer Code - Bell 103 Modem

110 and 300 Baud

Half/Full Duplex

Answer/Originate

Automatic detection of ASCII or Baudot (Auto Answer mode)

X-ON/X-OFF Signaling

6 GLOSSARY OF TERMS

Answer and Originate: settings which determine how your Memory Printer sends and receives ASCII signals. When talking with a computer, one machine must be set to originate mode and the other to answer.

ASCII: American Standard Code for Information Interchange. A 6, 7 or 8-bit character coding technique which enables computers made by different manufacturers to interpret patterns of bits in the same way. Letters, numbers, punctuation and special control characters such as carriage return and line feed are translated into binary numbers. With ASCII code, a computer can send and receive 128 different letters, numbers and symbols.

Baud, Baud Rate: A measurement in bits per second of the speed with which information is transmitted between two computer devices, such as a modem and a printer. The baud rate for Baudot is 45.5 or 50 (International Code). The baud rate for ASCII can be 110, 300, 1200 or 2400. Your Memory Printer can communicate in 45.5 or 50 baud Baudot and in 110 or 300 baud ASCII.

Baudot: A standard code or protocol for representing characters of the alphabet and numbers used TODs which uses 5 bits per character. Named for Emile Baudot, a pioneer in printing telegraphy.

Bit: The smallest component of a code. A bit is a tiny electronic signal that computers and TODs can send and receive.

Character: One symbol of a set of elementary symbols, as a letter of the alphabet. A character is made up of a group of 6, 7 or 8 bits in ASCII code and 5 bits in Baudot.

Computer Network: An organization that uses a large computer to store and send electronic messages for its subscribers. You can use your Memory Printer to call computer networks.

Half- and Full-Duplex: Settings which determine how your Memory Printer displays the messages you send and receive. Your unit must be set to the same settings as the computer you call.

Modem: An electronic device that connects a computer to the telephone lines. Computer owners who want to communicate over the phone need to purchase a modem. Your Memory Printer has a built-in modem.

Parity: Settings which provide an automatic way to make sure that each letter, number or symbol received is the same as each one sent.