

## The Internet and AAC



**T**he Internet and its precocious offspring, the World Wide Web, are in the spotlight. Open a newspaper or magazine, or turn on the television, and there's a story about the Internet. It's a hot topic. It's so hot that the United States government wants to regulate it and businesses want to put advertisements on it. Every month thousands of people hook up their home computers to telephone lines so they can work, play and share information with other people who live just down the block or halfway around the world.

### In the Beginning

The idea of linking computers started with the United States Department of Defense in the 1970's. They wanted to make sure they could share information in a national crisis. The first computer network was very small; it connected only seven computers across the country. Then the National Science Foundation got interested in communicating and sharing data by computers. Colleges and universities wanted in on the act, and soon just plain folks were getting on-line. And here we are today with millions of people sharing data and ideas with other people all over the world.



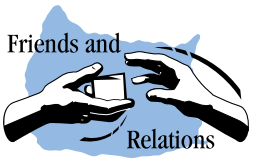


### Should I Get on the Net?

What does all this have to do with augmented communicators? Plenty. According to a report from the Trace Center at the University of Wisconsin,<sup>1</sup> these are some of the advantages the Information Superhighway may bring to people with disabilities:

- “Drastically increasing the ability for individuals with some types of disabilities to access and use information.
- Decreasing the personal isolation that some individuals experience because of restrictions in their ability to move about, to communicate, or to easily congregate with others sharing their interests and situation.
- Improving self image, by allowing individuals to interact with others in a way which makes their disability invisible or irrelevant.
- Providing opportunities to participate in distance learning programs or receive medical services from a remote location when travel is difficult.”

That is what's possible now and in the near future. The same document also gives some hints about what else may be possible someday:

- “Individuals with mobility or travel impairments will be able to do their shopping, learning, travel, medical services and work from their homes or other facilities.
- This new “mobility” can open

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# Message from the author

I recently celebrated a birthday. No, this isn't going to be one of those sappy meditations on how Mr. Old Age is ruining my life by tinkling his icy fingers up and down my back; rather, I want to reflect upon the technological change I've seen in my life. It has been great and swift.

I was born into a world where radio was the principle means of entertainment and information. Our knowledge of World War II came from newspapers, magazines, fuzzy-voiced reporters on the radio and friends and neighbors writing home from the front. These sources were augmented by black and white newsreel clips shown in movie theaters. How powerful these images were! They became the collective experience of the war for folks on the home front.

Since the Second World war, advances in technology are taking place with breakneck speed. Radio, the main mass entertainment medium when I was growing up, was pushed into the background by television. Television changed the way we lived and experienced current events. Those of us with TV sets could experience the events of the Korean war in our living rooms. This was merely a hint of things

to come. The collective impact of those theatrical newsreels would soon be gone, replaced by the more immediate, but more lonely witness of television. Instead of a collective gasp of recognition in a movie theater, we were able to work out our emotions to public events in the privacy of our homes.

While most of us were being transfixed by the miracle of television, another revolution was beginning: the computer revolution. The first computer was called ENIAC. It took up a whole room and used a lot of electricity when it ran. Although ENIAC had no practical uses, it did prove that the computer could work. The invention of the transistor paved the way for smaller and smaller computers that could actually be used by mere mortals.

I got my first computer in 1979. Most of my friends wondered why I had that strange looking object sitting on my desk. They gave me a hard time for using my primitive word processing program. A typewriter was much easier to use, they said. I kept on using my computer with a twinkle in my eye, because I knew I had a tiger by the tail.

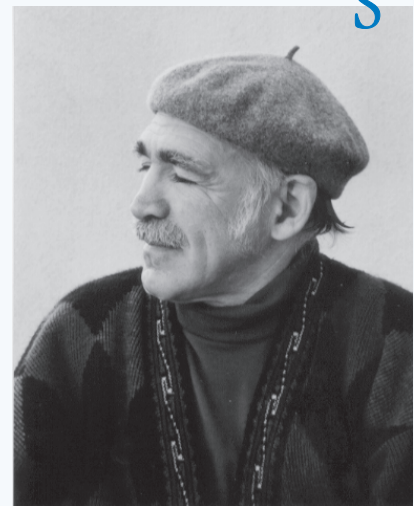
The personal computer has proven to be a great equalizer in

the lives of many people with disabilities. With PCs, more of us can independently read, write, organize, compute and play.

Personal computers are becoming a staple of many homes. I read a newspaper report last year which said computers outsold television sets for the first time in history. I find this amazing, and apparently other people do, too.

There is another revolution going on in the computer world. People no longer sit in front of their computers and work in isolation. They are discovering that it is much more useful to hook their computer to other computers by a telephone line, sharing information with people and organizations all over the world without leaving the house. This is the idea behind the Information Superhighway.

I believe telecommunications will have a great impact on the lives of people with disabilities. This issue of *Alternatively Speaking* explores the information superhighway, what it means to people who rely on AAC, and how to find the nearest on-ramp. **A**



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horizons for living and learning on all levels and allow individuals to “travel,” to our caverns and explore other environments.

- Individuals with physical manipulation difficulties could use simulations or virtual environments to participate in activities they wouldn't otherwise be physically able to do. For example, an individual with severe athetoid cerebral palsy can not easily construct mechanisms, operate delicate instruments, and carry out chemical experiments in the laboratory using fragile glassware. However, if the mechanisms, instruments and glassware were all simulations on the screen (or in a virtual environment), these individuals would be able to participate in such activities using keyboard control or whatever interface worked best for them.”

Enough of this pie in the sky business, what can you do on the Internet right now?

### e-mail

One of the most popular services on the Internet is electronic mail or e-mail.

A recent study<sup>2</sup> of augmented communicators and e-mail suggests that there are beneficial results from the use of e-mail by AAC users. The main purpose of this study, conducted by Pamela Mathy of the University of Nebraska Medical Center, was to examine the effects of electronic communication on opportunities for social interaction by people who rely on AAC. The study showed that e-mail has three distinct benefits over other types of communication:

- “Messages are sent by text, not by voice.
- Messages can be constructed off-line and uploaded to the on-line service, allowing the augmented communicator to become a more equal participant in a ‘conversation.’

- On-line costs can be kept down by going on-line only during the time text is being sent or received.”

The participants in this study were asked to evaluate their on-line experiences by ranking a series of fifteen statements on a scale of one to seven, one being strong agreement and seven being strong disagreement. Here are the statements which evoked the strongest agreement among the participants:

- “Having access to electronic mail has given me more control over my life than I had before.
- Using electronic communication has helped me connect with people who have similar interests to my own who I would not have been able to meet otherwise.
- I enjoy exchanging electronic mail with people I have met via electronic communication.
- Electronic communication services would help people who have physical disabilities gain more control over their lives.
- Presently, I find electronic mail a more rewarding way to keep in touch with family and friends than using the telephone.”

With e-mail there are no post offices to deal with, no stamps to lick or envelopes to seal and no long lines to stand in. A person who is communicating by e-mail addresses a message, writes what he wants to say and then sends it flying across cyberspace to the intended recipient without ever leaving his computer. The e-mail is received within minutes or hours. It's not like sending a

letter through the postal service, where each transaction takes days or weeks to accomplish.

### Discussion Groups

Life would be pretty boring on the Internet if all you could do is send messages to individuals. Fortunately, you can send messages to whole groups of people. Yes, this makes possible the electronic equivalent of junk mail, but it also makes possible one of the things that makes the Internet so interesting: discussion groups.

There are three basic types of discussion groups on the Internet:

- LISTSERVs
- Majordomos
- Newsgroups

A **LISTSERV** is an automated computer program that handles getting people on and off discussion groups, as well as posting individual responses to the various discussion groups as they are received. A LISTSERV can handle many discussion groups at a time. A LISTSERV at a university might have several hundred mailing lists on it. Discussion groups on a LISTSERV are called mailing lists because the LISTSERV sends e-mail written by the subscribers of a mailing list to all the other subscribers of that list. To get on a LISTSERV discussion group that interests you, you must “subscribe” to it. Just send

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## Speaking Out Through On-l

**W**hen I was about eight-years-old I discovered a short wave radio in the attic. It was made of sheet metal, and it made a great sound when I banged it on the side, but I soon learned to use it for things other than drumming. I discovered that the “Green Monster,” as I called it, pulled in stations from halfway around the world.

I also discovered the world of amateur radio. People actually sat in front of microphones in their homes and talked with folks in other parts of the country. I was thrilled. It was even more exciting to discover that all these people were listed in a big, fat book, along with their station’s call letters. I wanted a copy of that book, and I nagged my mother until she bought it for me.

I spent my afternoons transfixed in front of the “Green Monster” trying to pull in stations I’d picked at random from that big, fat book. “My God,” I would squeal to myself, “today I actually pulled in Arizona.”

But I soon grew tired of this electronic voyeurism: I wanted to participate. I spent hours going over the electronics until I felt I was ready to take the exam for the basic radio operator’s license.

Then someone pointed out a flaw in my plan. “Michael,” he said as he slowly slipped an arm around my shoulder, “when you speak, you sound as if you’ve got a ball of cotton in your mouth. I can hardly understand you when you are sitting next to me.”

It was true: Although I knew all the rules of the road to operate an amateur radio station, I lacked the one essential item to get on the air: an understandable voice.

This did not deter my determination to somehow get on the air: I tried to learn morse code. Six months with the dots and dashes proved to be of little value. In the end, I could only get my transmission speed up to two words per minute, not nearly fast enough to get my operator’s license.

So my dreams of becoming an amateur radio big shot floated away into the air, and I moved on to other boyhood pastimes - like baseball.

I got my first computer in 1979. With it I discovered the joys of word processing. Then somebody suggested I hook up my computer to a modem so it could talk to other computers. I had a hard time understanding why my computer would even want to talk to those other machines out there. And what would it say after it said, “Hello”?

It was years later that I actually did hook up a modem to my computer, and I did it out of necessity. I was in graduate school and was taking courses that required extensive use of all

the campus libraries and computers. Since time on the campus computer terminals was a very competitive matter, I needed a way to access the university computers from my home: I was forced into buying a modem.

No student with a disability should buy a computer without a modem to go with it. Not only could I access the campus computer from my home, I could get into the campus library’s electronic card catalog, too. I could do library work from home, on my own; and I soon discovered I could prepare extensive bibliographies just by downloading the citations from the electronic card catalog to my personal computer, thus saving me hours of tedious typing. Things were getting very exciting now.

But I didn’t know how exciting things would get until I took a course on management of special libraries. Part of the course covered the advantages and pitfalls of office automation, and the professor had wired the entire class into a local area network. Every student had the capability of sending and receiving electronic mail (e-mail) to and from every other member of the class, including the professor.

I soon discovered that this arrangement gave me the opportunity to participate in class as I never had before. Prior to e-mail, I would type my comments at home and hand them to the professor in class the next day. This process often did not work well because the professor might be too busy to read my note

# Line Services

immediately, and notes would often get lost. Neither of these problems existed with the computer network. I could respond to what happened in class within hours of its end, and I would almost always get a reply to my comments the next day. Students and professors began to see me as a contributing class member.

When I am out in the community and I try to communicate with someone whom I have just met, a lot of energy of the communication gets soaked up while my listener is trying to deal with my disability, but when I post a message on a LISTSERV or send e-mail, I know my ideas will be considered on their own merits, because the readers of my messages do not know I have a disability unless I choose to reveal this fact to them. My experiences have convinced me that this is a wonderful way for people with dysarthric speech to communicate with the outside world.

I am realizing a boyhood dream. No, I'm not talking over the "Green Monster," but it's a damn good equivalent. I hope to see you on-line soon. **A**

### Internet Safety

- Don't give out your address, phone number or the name of your school.
- Don't tell anyone where you will be (at school, on vacation, at work).
- Don't stop to play in areas which are dominated by sex, drugs or violence.
- Leave and get an adult when someone is bothering you.

# Kids in Cyberspace

**O**ne might think that the Internet is a way for children and teens with disabilities to meet and talk to other kids with disabilities; that it is a safe and accessible place to discuss disability issues. This is true, but everyone I have talked to says the best thing about the Internet is that on it, they are just like anyone else. Lisa Wahl, the Director of the Center for Accessible Technology in Berkeley, California, says people "...feel completely normal for the first time."<sup>5</sup> Some people who use AAC can not type fast enough to really participate in live "Chat rooms", but most can participate by sending e-mail and posting messages on LISTSERVs, as well as just browsing through the information.

Vanessa, a teenager who relies on AAC, writes, "For the first time in my life, I am totally independent. I am doing what every other teenager is doing, talking on the phone. The great thing is there's no one looking over my shoulder! Being on-line is exciting. I love to hear the voice on America Online (AOL) say, 'You've got mail!'"<sup>6</sup>

I talked with Sarah Armstrong,<sup>7</sup> who teaches children and teachers how to use the internet. She has written an excellent book

called *A Pocket Tour of Kidstuff on the Internet*.<sup>8</sup> Armstrong says that a child can easily go on the Internet by third grade if not sooner. She recommends Uncle Bob's Kids' Page<sup>9</sup> as a good place to start.

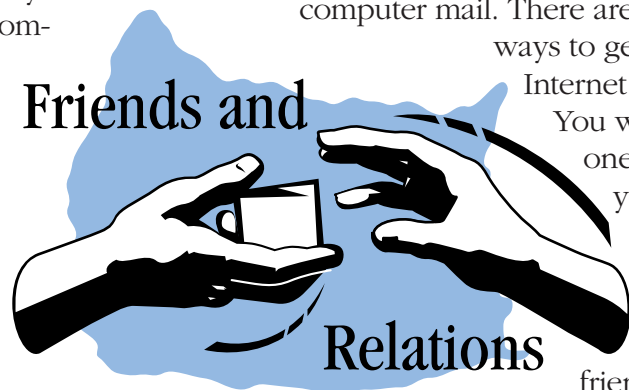
To help a young person get on the Internet, you need access to an Internet account. An Internet account gives you an e-mail address for sending and receiving computer mail. There are many

ways to get an Internet account.

You will want one that let's you spend a lot of time on-line. Ask friends,

neighbors, relatives, librarians and teachers what Internet service they use. Try to get the same one so you can ask them questions while you are learning.

In regard to Internet safety, Armstrong says that just as parents make rules about television and talking to strangers, these same rules apply to the Internet. (See box.) Parents and teachers have the responsibility to tell kids about Internet safety. Common sense rules are all it takes to have a safe and fun Internet experience at any age. Many of the kids' areas have an administrator, a "sysop," who censors unsafe communication. **A**



*Continued from page 3*

an e-mail message to the LISTSERV and tell it what mailing list you want to be on. There is almost never a charge to subscribe.

For example, I am on a mailing list called ACOLUG that discusses AAC from a user perspective. To join this list and become part of the discussion, I sent an e-mail message addressed to [LISTSERV@vm.temple.edu](mailto:LISTSERV@vm.temple.edu). For the text of my message I wrote: [subscribe ACOLUG Michael Williams](#). Then I sent the message. That's it. Later I got some e-mail saying I had subscribed to the ACOLUG mailing list, along with an instruction sheet about the list. I saved this because it has many useful tips about the list if I ever get stuck.

How would you get off a mailing list if you didn't like it? It's easy. I just repeat the steps above, only in the body of the message I write: [signoff ACOLUG](#).

**Majordomo** is another mailing list handler. It serves the same function as a LISTSERV, getting people on and off mailing lists; however, it differs from a LISTSERV in the way you get on and off a mailing list. I am on another list called [berkeley-disabled](#) that talks about the Berkeley, California disabled community. Here's how I got on it: I sent an e-mail message to: [majordomo@berkeleysys.com](mailto:majordomo@berkeleysys.com). I left the subject line blank. In the body of my message I wrote the following: [subscribe berkeley-disabled mbwill@well.com](#), which is the name of the list followed by my e-mail address. I did not follow it with my name. If I ever want to get off this list, I will repeat the steps for getting on,

but in the body of my message I will write: [unsubscribe berkeley-disabled mbwill@well.com](#).

As you can see, LISTSERVs and majordomos work in almost the same way, but with subtle differences. It's things like this that drive new users of the Internet up a wall and keep other potential users off the net completely.

Another type of Internet discussion group is called a [newsgroup](#). Internet newsgroups are like mailing lists that have gotten too big for their britches. Popular newsgroups may get several hundred new postings per day. Because of this high volume it is impossible to e-mail the messages in the newsgroups out to individual subscribers. As a result, newsgroups are read on-line with a piece of software called a newsreader. Because newsgroups need to be read on-line, they are impractical for those of us who need more time to do things. There are tons of newsgroups on the Net, and by the time you figure out how to use your newsreader and flip through several newsgroups trying to find one that interests you, you will look at the clock and notice it's many hours later and on-line charges have eaten up many of your dollars. The moral of this story is that newsgroups are not for the faint-hearted or novice net surfer.

### **The World Wide Web**

Started a few years ago by hardcore computer fanatics, the World Wide Web has grown from a small sideshow attraction into the hottest spot on the Internet. One of the most frequently asked questions of businesses today is,

“Are you on the Web?”

The excitement of the Web comes from its ability to combine text, pictures and sound within the same document and display it on a computer screen. The Web also makes it possible to link two or more documents together to provide a Web user with a seamless flow of information on a topic or series of related topics. The really neat thing about this is the documents need not be stored on the same computer in order to be linked together. Linked documents can be stored on computers that are anywhere in the world.

### **Surfing The Web**

In order to start using the world Wide Web, you need a piece of software called a web browser. Among other things, browsers assemble the various parts of a web page and display them on the computer screen as a coherent whole. They also provide you with point and click access to the various parts of a Web page.

### **A Real Life Example**

Recently, someone on the ACOLUG mailing list asked if anybody knew anything about Canine Companions, an organization that trains and pairs service dogs with people with disabilities. I happen to know a bit about this organization since their national headquarters is near where I live, but I didn't have any specific information at hand that I could share. I suspected Canine Companions might have a web page. I opened my web browser and went to work. My first stop was at a web site called Yahoo.<sup>3</sup> This is an excellent search service for the Web. I typed the words “canine

companion” in the Yahoo search field and pushed the return key on my computer. Soon I was presented with a list of possible sites. At the top was the Canine Companion web page. I put my cursor on the highlighted name and clicked; this took me straight to the correct page. It had all the information I could want on the organization. I saved the relevant text on my computer’s hard disk. I put this information into an e-mail message and sent it to the person on the ACOLUG mailing list who asked the question. He was delighted, and I was pleased I could be of service. The really neat thing about this was that the entire transaction, from search to sending off the information, only took about ten minutes.

I was discussing the impact the Net has had on people with disabilities with the mother of a child with cerebral palsy. She told me, “I was looking for a community for my daughter, and I think we found it on the Internet. She had no autonomy before she got on the Net—mobility stopped her from making friends—now she has emotional, if not physical, autonomy.”<sup>4</sup>

There is no doubt that the Internet holds great potential for persons with disabilities, especially augmented communicators. We can be ourselves on the Net, unfettered by the way we look or the way we sound.

I hope many of you will get to experience the power of going on-line. **A**

## Resources to Get You Surfing

*Internet for Kids!: A Beginner’s Guide to Surfing the Net*, by Ted Pedersen & Francis Moss. Published by Price Stern Sloan. 1995. \$8.95 USA.

**T**his is a book for kids that really is for kids, and a good effort it is, too. In spite of the authors’ irritating convention of rolling up their basic information in a silly story about two children who go off to Cyberspace Academy where Cybersarge shows them how to navigate the Net, they have put all the essential stuff in an easily digested form. There is a section for parents and teachers, too. This is an outstanding book, and a bargain to boot.

*Internet for Dummies: A Reference for the Rest of Us*, by John R. Levine & Carol Baroudi. Published by IDG Books. 2nd edition 1994. \$19.99 USA.

IDG Books publishes some of a best computer instruction books under the world’s worst series title, *For Dummies*. Every book I’ve seen in this series has been excellent. This volume is no exception. It gives you the basics of how to get on the Internet and what to do once you’re on-line. Information is presented in clear, easy-to-understand language with lots of examples to illustrate each point. If you’re staring out into the vast Internet ocean wondering how you catch your first wave, this is a good place to start.



*What’s on the Web*. Edited by Eric Gagnon. Published by Internet Media. Fall/ Winter 1995/1996. \$23.95 USA.

This big fat tome is published quarterly and contains hundreds of annotated web sites organized by category. One of the best features of the book is its introductory material on the World Wide Web, what it is and what it can do when it’s at its best. This is amplified by a very good graphical presentation of the main points which might help to smooth out your learning curve once you get on-line. The editors certainly haven’t confined themselves to safe web site choices. You’ll find Web pages for just about everybody in the book, from politically conservative gun owners to believers in the paranormal. This is a great book to have handy whenever you get the urge to fire up your computer and web browser and explore the Web. **A**

“Networks offer a uniquely friendly place for most people with handicaps because nobody knows or cares about the handicaps.”  
Internet for Dummies

## What Can Kids do on the Internet?

**Y**ou can communicate with people all over the world on the Internet. Whole sections of the Internet are just for young people. You can write messages to other kids your age and talk about stuff that interests you.

No one will know about your disability until you decide to tell them because everyone looks and sounds the same on the computer.

A fun thing to do on the Internet is to join a

“LISTSER V.” Ask someone (or look in a book) to find a LISTSERV for people your age. A LISTSERV is like a club. It is a group of people who have something in common such as an interest

**“Searching around for stuff is fun!”**

**Chris, Age 11**

in jokes, or being school age. When anyone on a LISTSERV writes a message, it goes to everyone on the LISTSERV. If you want to send a private note



(e-mail) to just one person in the LISTSERV, you can do that too.

You can make a survey asking interesting questions such as, “What is your favorite sport?” Post it on a LISTSERV or e-mail it to your keypals. Funny, unusual or thought provoking surveys get a lot of answers.

You can send me mail on the Internet at [mbwill@well.com](mailto:mbwill@well.com)

Thanks to Lisa Wahl for her help with this section.

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9. Uncle Bob’s Kids’ Page. <http://gagme.wwa.com/oba/kidsi.html/>

### Some Internet Resources:

Sara Armstrong, Internet consultant. 510-848-6340.

Lisa Wahl, Director. Center for Accessible Technology, 2547 8th St., 12-A, Berkeley, CA 94710.

### Some Disability Web Sites:

Evan Kemp Associates  
<http://disability.com/>

WebABLE!  
<http://www.webable.com/>