BRADY

second edition

BRADY'S GUIDE TO NAVIGATING THE INTERNET

HEW R. STREGER

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Brady's Guide to Navigating the Internet

Second Edition

Matthew R. Streger, BA, NREMT-P

Paramedic
Greenville County EMS
Greenville, South Carolina

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Chapter 1

Introduction

Internet History

The Internet can be a very intimidating place. It is a classic case of the "haves" and the "have-nots." Those who have Internet access speak a special language and often know about things before everyone else. Those who do not have Internet access can feel left out in the cold, without information or contacts that may be essential for their business. This is not to say that the Internet is an easy place to navigate—it can be confusing, frustrating, and complicated.

The Internet as we know it now was born in 1969 as a group of computers from different colleges and universities around the country. You may have noticed that many people who have Internet access are from schools. This is because that's where it all started. The only problem was getting all these different computers to speak the same language. The U.S. government sponsored the solution, which is a universal language for all computers on the Internet to use. This language is called *transmission control protocol / Internet protocol* (TCP/IP).

The Internet is just a way of connecting many different computers throughout the world. Nobody controls the Internet though a central group controls *domain names*. These are the individual names of each computer that is connected to the Internet. Names are automatically converted into *DNS* entries, which are four groups of numbers separated by periods. Domain names as we use them are issued by a central agency. They usually have the computer name based on the company, school, or organization that owns it, followed by the type of agency. You may see types such as *edu* for schools and universities, *com* for commercial establishments, *org* for nonprofit organizations, and *gov* for government agencies.

There are two important concepts to understand regarding the Internet: *client–server networks* and *packet data transfer*. The client–server network exists where a computer (client) requests a file or piece of information from a central computer (server). In this way, many computers can share up-to-date information without having to update files on each individual client computer. The Internet is just an enormous client–server network, where your home computer requests information from servers around the world.

Packet data transfer is the method by which information is transmitted from computer to computer on the Internet. A message, like an e-mail, is sent from computer A to computer B. It is not transmitted directly from computer A to computer B. Rather, it is broken down into packets, small pieces of the original message, and bounced through many servers along the way. Different packets may take different routes to the destination. In this way, a roadblock at one server along the way will not prevent the message from being sent. It will just take another route and be reassembled at the end.

There are several different functions of the Internet. The most simple is electronic mail, or *e-mail*. E-mail is just a simple method of sending a message from one person to another. *Newsgroups* are public forums for posting messages for everyone to read and reply to on a specific subject. Newsgroups are also known as Usenet. These are all simple, text-based functions. Most early Internet work was done in a text language called *UNIX*, and some Internet connections are still in UNIX. However, the explosion of growth on the Internet is related to the development of *Hypertext Markup Language* (HTML) in 1992.

The *World Wide Web* (WWW) uses HTML to send pages of text from one computer to another. The pages may have text, pictures, sound, and video as objects on the page. Certain words, called *hyperlinks*, can take you to another place on the Internet just by clicking on them. It was the ability of the Internet to transmit multimedia pages to your computer that made everyone suddenly get Internet access, and it is probably why you are reading this book right now.

That might be the most technical information you have to read and understand to get started on the Internet. Whatever happens, don't get frustrated while you are exploring. The Internet is a very rapidly changing environment, where what worked yesterday may not work today, and today's technology will be obsolete tomorrow.

Chapter 2

Internet Access

Hardware Requirements

Before you can start surfing the Internet, you must have a computer capable of accessing the Internet. The computer itself is referred to as *hardware,* and the programs that run on the computer are called *software.* Your hardware and software depend on the *operating system* (OS) that you are running.

Two major operating systems are currently in use for home computer users—Windows and Macintosh. You may see these commonly abbreviated as Win and Mac. For simplicity, we will limit ourselves to looking at the Windows system. If you find yourself using a Mac, there are not many significant differences in accessing the Internet from one operating system to another. Windows comes in several versions, Windows 3.1, Windows 95, and Windows NT. Windows 3.1 and 95 are primarily for home computing use, and Windows NT is geared towards networks and businesses. A new version of Windows called Windows 98 is pending release as this book is being written. The numbers after a program name generally refer to the release number; the higher the number, the newer the release. (No, there are not 95 versions of Windows; the "95" represents the year of release and was a marketing strategy.) The operating system is the foundation program that allows all the other programs to run.

A typical computer consists of a *central processing unit* (CPU) and a monitor, or screen. The keyboard allows you to type into the computer, and the mouse is the common tool to navigate around the screen. The *modem* is the connection between your computer and the telephone system.

A few thoughts on computer technology: a faster CPU is not as important as having enough *random access memory* (RAM) to run your programs. RAM is where your computer stores programs that it is currently running. You will probably not notice the speed increase you get from having a faster CPU, but you will notice pretty quickly when your computer crashes because you don't have enough RAM. This is not to be confused with *read only memory* (ROM), which is memory where you cannot store information. This type of memory is reserved for basic operating instructions for the computer, and programs or data cannot be stored there.

Two more important hardware notes: buy the biggest *hard disk* (HD) you can afford. The hard disk is where your computer permanently stores programs or files. The size of programs increases each year, so a HD that seems enormous today may not be large enough tomorrow. Lastly, buy the fastest modem you can afford. At present, modems typically run at speeds of 28,800 or 33,600 *baud*, or bits per second that can be transmitted over the phone line. Modems are now coming out that run at speeds of 56,000 baud. Several new technologies offer alternatives to traditional telephone Internet access, such as cable modems, satellite access, or special telephone lines. Each of these has advantages and disadvantages, and should be thoroughly researched before committing to such a technology.

One final thought on computers: buy the best computer you can afford that does what you need today. The speed of computers generally doubles every 18 months. You will go bankrupt trying to keep up with the current technology, so try to follow the preceding guidelines, and make sure your hardware will perform the tasks you need it to do.

Internet Service Providers

Once you have a computer, you will need an *Internet Service Provider* (ISP). This is a company that you pay to call their computer to access the Internet. There are a few different types of ISPs that you can choose from, and each has advantages and disadvantages.

Any discussion of ISPs must begin with America Online (AOL), the largest commercial ISP in America. About half of all those with Internet access pay for it through AOL. AOL has several payment plans, the most common being $21.95 per month for unlimited access. They also offer plans by the hour or by the year, or where you have Internet access through your work or school. There is a developing trend away from unlimited Internet access for a flat rate, so watch the pricing plans carefully.

Being the largest provider has many advantages. Many people you know may already be on AOL, which makes contacting them very easy. AOL provides a large amount of special content that is not available via the Internet to the general public. AOL is also a worldwide company, which means you can often access them by a local phone call from anywhere. If you travel and need Internet access from the road, or have the potential to relocate permanently, this is a great advantage. You would not need to change your e-mail address if you move; you would simply need to call a new local phone number to access your account.

However, being the largest provider also has some disadvantages. AOL has become infamous recently for busy signals and slow service during peak times, especially since they implemented their unlimited pricing plan. AOL also has had problems with the speed of e-mail delivery between their system and the rest of the Internet. AOL claims to be adding equipment to improve service.

AOL has their Terms of Service, which restricts some activity on their system. They block access to certain sites with objectionable material and make parental control of access very easy. They will revoke your privileges on their system for violations of their Terms of Service, which include posting profanity. To monitor their Terms of Service, AOL may censure you based on postings you make to various forums. E-mail that is sent within the AOL system may also be subject to their Terms of Service.

There are a few other companies like AOL, such as Prodigy and The Microsoft Network (MSN) which offer many of the same features as AOL, but with different content. In the changing world of the Internet, America Online has recently purchased CompuServe, a company that competed for some years with AOL.

If you would rather not use a company such as AOL, you can obtain access to the Internet through another ISP. Companies such as AT&T, MCI, UUNet, and Netcom are large nationwide providers. They do not have the special content that companies such as AOL offer, but they are often faster and more reliable. Most do not block access to any sites, nor do they censure objectionable material (parental controls for minors are widely available). Most ISPs offer an unlimited access pricing plan similar to AOLs.

You can also search out a local ISP where you live. Countless companies provide access near you, though many are actually just middlemen to a large nationwide provider. Internet access from a local provider may be cheaper than from one of the nationwide companies, especially if you purchase a year or more in advance. Any nationwide provider offers the two advantages mentioned earlier: you can often access your account

from the road if you travel, and you can keep your account if you relocate. Local providers do not have these advantages, so you will have to weigh the advantages and disadvantages for yourself.

The last major method of obtaining Internet access is through work or school. Many employers and most colleges and universities offer some form of Internet access. This type of access does not usually cost the person anything, but may be available only from work or school. However, there are several disadvantages to Internet access through these means. Your school or employer may restrict your access to certain sites or monitor your online activity. Some accounts are able to view only text, not pictures and other multimedia objects. These accounts are often called *shell accounts.* What's more, when you leave that job or school, you will have to change your e-mail address.

Troubleshooting

Unfortunately, you may find yourself having trouble accessing the Internet. Several common problems can be fixed easily:

- Make sure your modem is set up properly in Windows. External modems should be plugged into the computer and into the electric outlet, and need to be turned on. Internal modems need to be configured properly through software. Make sure that you have properly selected the type of modem you have in Windows.
- Make sure that your Internet program knows the type of modem you have and where it is located. You will need to indicate which communications *(COM)* port, or serial port, the modem is attached to.
- Check the Internet settings for your particular connection. Your ID should be entered properly (lowercase and capital letters matter!). Some programs require you to enter DNS numbers or server names. You should get these directly from your ISP.
- If you have trouble connecting at a high speed, call your telephone company and have them check for noise on the line. Interference caused by static on the telephone line can slow down your connection speeds.
- If you have been connecting to your ISP successfully, but then develop problems, contact your ISP. They may be having temporary technical difficulties, which develop quickly (and are resolved) every day.

Tomorrow's Access

There are two things you should remember about the Internet's always changing nature. One is that as more people get online, you will experience more delays. The bottleneck is usually not on your end; it is the computer you are trying to access. Don't get too frustrated, even when you can't get online when you really need to. Wait a half-hour, and then try again. The bottlenecks tend to go away pretty quickly.

Second, be aware of the new frontiers in Internet access. The technology changes faster than any book can be published, so read a magazine or the newspaper, watch the evening news, or get online to stay up on the newest ways to access the Internet. Things like cable TV modems or digital satellite are being tried out, and tomorrow may bring another revolution in access technology.

Chapter 3

E-Mail

E-Mail Basics

The simplest function of the Internet is electronic mail, or *e-mail.* Most people have had some experience with e-mail, often through their work. Although most work e-mail systems are independent from the Internet, more and more companies are integrating the two.

Internet e-mail addresses have two parts: the name and the domain. The name is the person you are sending the message to, and the domain is the name of the computer where his or her account is located. For example,

bobsmith@netcom.com
reaches "bobsmith" at the computer "netcom.com."

E-mail messages can be sent in one of two formats: text or HTML. Text messages are the most basic, and cannot contain such things as fonts, bold or underlined text, or hyperlinks. However, many simple mail programs cannot read HTML messages. HTML messages offer text formatting and the ability to add hyperlinks to other Internet locations.

Often, files are attached to e-mail messages for transmission across the Internet. For example, you can take a word processing document or a picture that you have, attach it to an e-mail, and send it to someone else. It will take some time, depending on the size of the file you are sending. Then the person you are sending to can download the message and the file attachment. This can be much faster than faxing a large document and allows the recipient to edit the file on his or her computer.

E-Mail Programs

A large number of programs will send and receive e-mail, from the most basic to the very complicated. The program that you will use depends greatly on the ISP from which you are getting your mail. AOL has their own built-in mail system, which works with messages both on the AOL system and to others on the Internet. It is a very simple mail system, with a basic address book. AOL does not currently have mail *filtering*, where messages can be sorted as they are received into folders based on who sent the message or the message subject.

Other ISPs will provide you with a program they choose to access the Internet, such as Microsoft Internet Explorer or Netscape Navigator. Although these programs are primarily used for browsing the World Wide Web (and will be discussed at length later), they both have e-mail functions built in. Other times, you may choose a program you like and configure it yourself, such as Qualcomm Eudora. This process can get fairly complicated though.

Choosing a mail program should be based on what program works best with your ISP. If you are provided with a program, you should stick with it until you become very familiar with Internet operations. Once you are comfortable with the Internet, look around at what program has the best features for the price at the time.

One more option that you can consider. If you need Internet access only in order to send and receive e-mail, there are free services that offer e-mail only. Companies like Juno and Hotmail offer free e-mail, but there are a few conditions. You cannot send or receive file attachments, and you

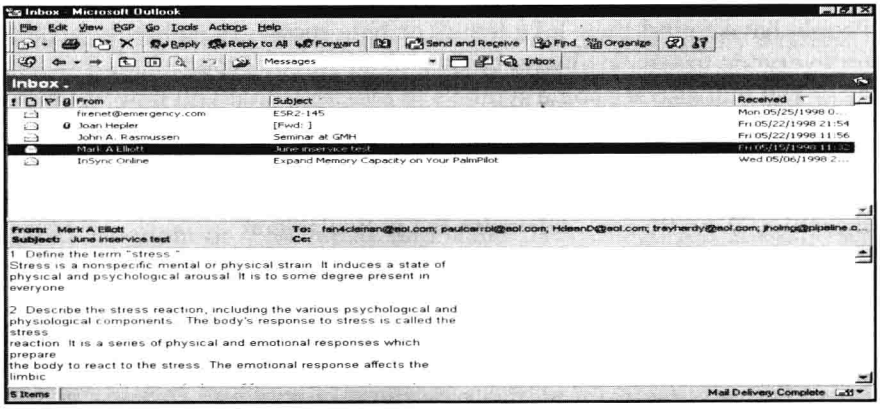

Figure 1 E-Mail on Microsoft Outlook Express.

must tolerate the commercials that are built into the program. And you do not get access to the World Wide Web, Usenet newsgroups, or other Internet features.

E-Mail Etiquette

Although there are many advantages to using e-mail, there are also several disadvantages. The bane of every e-mail account is *spam.* This is unsolicited, bulk e-mail that companies or people send out, usually selling products or services. Often, people get more spam in their mail accounts than actual e-mail. It is very difficult to defeat spam since the technology to create spam improves faster than that designed to beat it.

Here are a few pieces of advice on defeating spam. If you post to a newsgroup, do not include your e-mail address. Some companies have automated programs that search out addresses just to include in the spam lists. Some people recommend not creating a profile on AOL, which tells people something about you personally. If your mail program has a filtering system, you can filter out messages that you know are spam. If you do receive spam, you can try sending a remove message to their server. However, be polite. Some people have found their mailboxes filled with thousands of spam messages when they've complained to the spammer in a threatening manner. Or you can do what most people do: delete the spam and move on.

Another piece of advice: never place anything in an e-mail that you would not want to be read by the general public. With one mouse click, a message can be forwarded to thousands of people, some of whom you might not want to get your message. Some people have inadvertently sent their message to the wrong person or to their entire mailing list. People have found their love letters or hate messages suddenly posted for everyone to see. So always be careful when you type.

You will also see some symbols in messages that you may not have seen before. *Emoticons* are symbols created with punctuation marks that are used to convey a meaning or emotion, like the smiley face :-). Hundreds of combinations of smiley faces are used, each with different meanings. A pretty comprehensive list is available at

http://www.astro.umd.edu/~marshall/smileys.html

Lastly, when you post on the Internet, make sure the Caps Lock button on your computer is off. It's considered impolite, like yelling, to post in all capital letters. If you're lucky, someone will give you a quick lesson in online etiquette. If not, you might find yourself *flamed,* or publicly ridiculed in a very graphic way.

Chapter

Newsgroups

Newsgroup Basics

If e-mail is the most basic and widely used part of the Internet, newsgroups are the least used and understood. People who use the Internet every day have never heard of a newsgroup, nevermind used one. But newsgroups, also called Usenet, are a valuable part of the Internet.

A newsgroup is like a bulletin board on a college campus. There are a large number of bulletin boards, more than 18,000 so far. Each bulletin board is for a certain topic, and topics are categorized in similar areas. Any posting on a bulletin board is there for the general public to see, and people can add postings when they want to or just browse what others have posted.

Your ISP subscribes to the newsgroups on a news server, which acts as the campus. The topics and the categories are determined by a central agency. Categories are things like *comp* for computer topics, *gov* for government topics, and *sci* for science topics. You may see public groups like *microsoft* for support for their products, or state or city names that are geographically related. For example, such newsgroups may advertise jobs in a certain area. Countries also have categories, like *uk* for the United Kingdom or *fj* for Japan, and states have categories. The largest category is *alt*, which is where topics that were difficult to classify are listed. The alt group has *binaries*, which are pictures or sounds (some of which are not for younger audiences), fan groups, game discussions, and hundreds of other topics.

In order to find a newsgroup on a certain topic, you can tell your newsreader program to find a certain word or part of a word. Any newsgroups with that word in the title will be indicated for you. Some search

engines are also programmed to find news postings, but you will have to select this option. We discuss search engines in Chapter 5.

As with any bulletin board, you can just browse what others have said on the topic or make your own posting. It is recommended that you just browse, or "lurk" in a group for a little while before posting to get the feel of the topic. This also prevents you from asking any questions that have already been asked, which can get you flamed. Newsgroups often have *frequently asked questions* (FAQ) files. Usually, the most common questions asked on a newsgroup have all been compiled for new users. If you do not see the FAQ file on a newsgroup, don't be afraid of asking for it. Some newsgroups are moderated by a supervisor who watches all the postings to make sure they are on the appropriate topic. However, most are just an open forum that takes care of its own content. Off-topic posts do happen and are more common on some newsgroups than on others.

When you make a posting replying to someone else, it is making a *thread.* A thread is a continued discussion on a particular topic within a newsgroup. Usually, threads appear in your news program as indented beneath the original post. This indicates that all these messages are on that particular topic. It is also considered polite to include a quote from the original post when replying to a thread. However, it is considered very impolite to repost a very long message with a one-line comment on the end. This also will likely get you flamed.

Most news servers will let messages expire after a certain time, which depends on how many messages get posted to a particular group. But when you make a posting, it is kept in an archive of messages on the Internet that can be searched by several search engines. People can enter a topic, or your name, and retrieve anything ever posted on that subject, or by you. There is no record of what newsgroups you lurk in, but as soon as you make a posting, it's there forever.

One last word of warning on newsgroups: the content of news postings is generally considered to be open for all, but plagiarism rules still apply. Taking something that you read on a newsgroup and passing it off as your own thought is wrong. But don't believe everything you read on the Internet. Urban legends and falsehoods are quick to circulate on the Internet.

News Reader Programs

In order to read newsgroups on the Internet, you will need to use a newsreader program. As with mail programs, your choice of program will be strongly influenced by your choice of ISP. AOL has their own news program built into their system. Both Internet Explorer and Navigator have