NMFRC News

http://cai.eclipse.net/home2.htm

William D. "Bill" Bonivert
Sandia National Laboratories
M/S 9404, Box 969
Livermore, CA 94551-0969

George Cushnie
CAI Engineering
3433 Valewood Dr.
Oakton, VA 22124

The Basics on How to Use The National Metal Finishing Resource Center

This column—the first in a series—will highlight the National Metal Finishing Resource Center (NMFRC) and describe how to take advantage of its many electronic information sources. The Resource Center was established under a program jointly funded by the Commerce Department's National Institute of Standards and Technology (NIST) and the Environmental Protection Agency (EPA). Industry partners are the American Electroplaters and Surface Finishers Society (AESF), the National Center for Manufacturing Sciences (NCMS), the National Association of Metal Finishers (NAMF), and the Metal Finishing Suppliers Association (MFSA).

An Information Source For Surface Finishers

The Resource Center is being designed to be the most substantial, comprehensive environmental compliance, technical assistance and pollution prevention information source available. The Center is specifically targeted for the metal finishing industry and technical assistance providers. It will be a one-stop, electronically linked source for all the information you need on an occasional or regular basis.

Examples of what will be available through the Resource Center include:

- Full text of pertinent regulations;
- Late-breaking directives and interpretations from EPA and states;
- Technical articles on metal finishing and pollution prevention and control;
- Access to vendor sales and product information;
- Interactive forums on technical issues of interest to members;
- Specifications used in the metal finishing industry;
- AESF Board and Committee forums.

The Resource Center will be accessed through the World Wide Web (WWW or simply, the Web) on the Internet. The Web enables the Resource Center to maximize its resources by permitting hundreds of people to simultaneously access the same useful information. It also permits displaying information in various formats and frequent updating of information. Additionally, the Web allows a person to access very large databases from a personal computer and modem, without additional cables, and the extensive connections/cost of a complicated network. Also, the Web furnishes the means to provide unique communications services, such as e-mail and forums.

Other methods of information dissemination will also be used by the Resource Center. Through these articles, we hope to provide those of you who are not now connected to the Web with the information you need to make intelligent selections to get on-line. In the meantime, the Resource Center will have an 800 number, as well as FAX-back capabilities. Subscribers, however, will be urged to use the Web, because it will provide the most extensive resources.

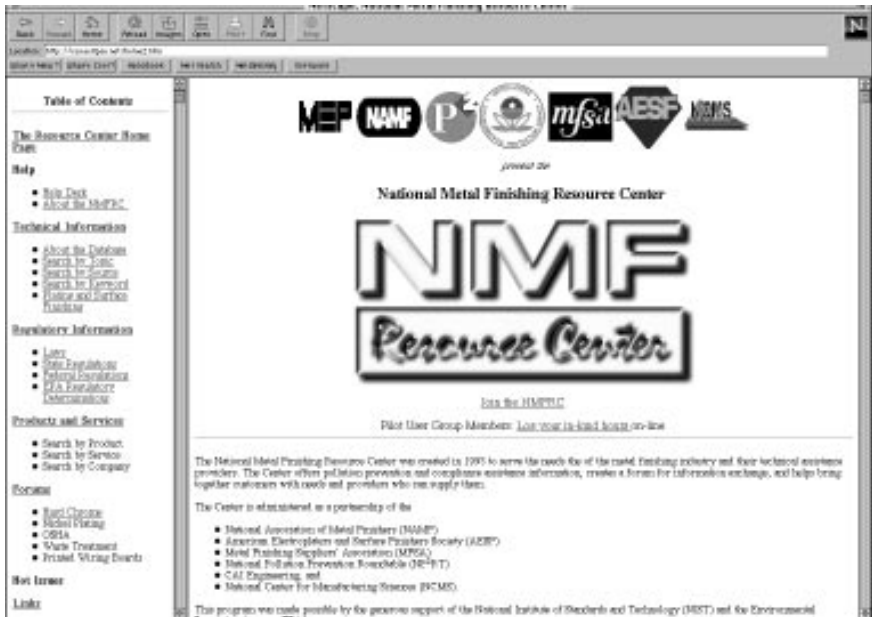

Fig. 1—If you use a Netscape browser, the NMFRC "home page" will look like this.

What is the Internet?

The Internet is the name for a vast network of millions of computers, all hooked together through various means. It was started by the Department of Defense (DoD) in 1969. At that time, the DoD created the ARPANet, a computer network through which governmental, educational, and commercial organizations involved in military research could exchange vital information if a disaster were to disrupt ordinary communication. It has now grown into something much larger than perhaps anyone ever imagined.

The World Wide Web is the fastest growing part of the Internet. The Web was developed to fulfill the need of presenting information in a variety of formats that may include text, graphics, sound, and video. Computers hooked to the Internet act as Web servers, or providers of Web pages. A server may have dozens or hundreds of pages of information. Usually, all the information available on a server is organized and accessible through the home page, which serves as the starting point for a visit. A computer located at the National Center for Manufacturing Sciences (NCMS) in Ann Arbor, MI is the Web server for the Resource Center.

"Surfing" the Web

A basic feature of information available on the Web is called *hypertext.* Hypertext documents are linked to other documents, which, in turn, are linked to still others, forming a virtual web of logically related information. Links are accessed by a click of your mouse. Activity links will show up as colored text, an icon or a button (see examples). From this new location, which may or may not be on the same server as your original document, you may still link to other documents of interest or return to your original document by clicking the "back" or "home" icon. This is the true meaning of "surfing" the Web.

The Internet has expanded at an incredible rate over the past two years, and it provides remarkable information resources. It is all beyond the reach of an individual who cannot get on-line, however. The remainder of this column is devoted to getting metal finishers connected to the Internet.

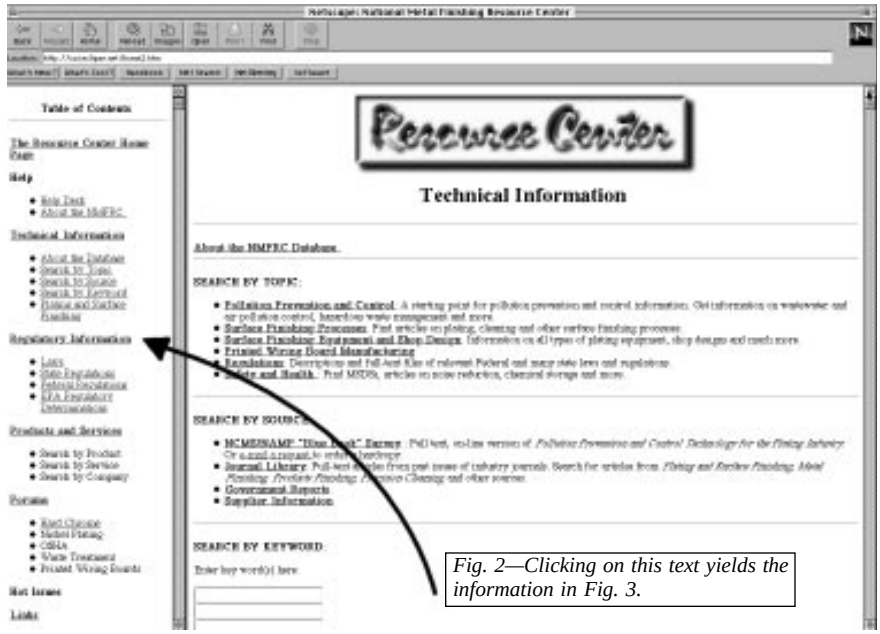

Fig. 2—Clicking on this text yields the information in Fig. 3.

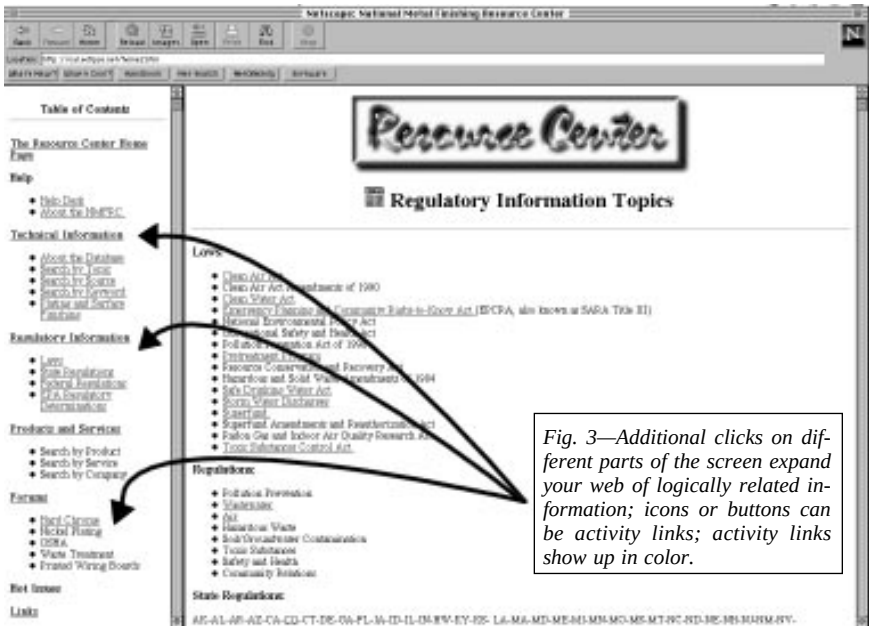

Fig. 3—Additional clicks on different parts of the screen expand your web of logically related information; icons or buttons can be activity links; activity links show up in color.

Getting Connected

There are four basic needs for entering the information highway: A computer, modem, some software, and an Internet service provider. Surprising to some, Internet access neither requires the fastest computer models nor is it expensive to access. Using a modestly priced computer and modem and inexpensive local access will suffice.

For most of us, the Internet is accessed through standard telephone lines. This is accomplished by connecting the telephone line to a modem that is in turn connected to your computer. (Large companies and organizations often access the Internet using ISDN or T1 telephone lines.) The computer software (in the case of Windows 95, all software required for connection is included) directs the modem to dial the Internet service provider (ISP). A browser (another piece of software) furnishes the means for easily navigating from Web site to Web site.

Any computer with a 386 (or roughly equivalent Apple Macintosh) central processing unit (CPU) or faster, with at least four megabytes of random access memory (RAM) will just be adequate for Internet access.

If you are purchasing new equipment, we suggest that you take advantage of the marginal costs of higher memory capability and faster computing speed. A very adequate computer system would consist of a 486 (100 or 120 megahertz) or a Pentium CPU, eight to 16 megabytes of RAM (16 is recommended for Windows 95), and a hard drive with 500 megabytes (MB) to 1,000 MB (also referred to as 1 gigabyte) of hard disk space. Computers are available with these specifications at a cost of about $1,800 to $2,200 or less and include modem, sound card, CD-ROM drive and speakers.

For Internet access via a modem, speed is a primary concern. Although 14.4 kilobytes-per-second (kps) modems have become very inexpensive, they are not recommended. Accessing the Web with a 14.4 kps modem is a frustrating experience, and you will quickly tire of waiting for images or data to appear on your computer screen. Modems of 28.8 offer twice the performance of those of 14.4 kps and are currently available in the range of $90–$250. For most users, the lower-priced modems in the range are sufficient. Modems of 33 kps are also available, but most access providers do not currently offer connections at this speed (but they probably will in the future, and these modems can connect at 28.8 kps as well).

The software needed to connect to the Internet includes computer system software and an Internet browser. The system software usually comes with the computer, but can also be purchased. The Internet browsers are relatively inexpensive or, in some, cases free. The most popular browser used is *Netscape,* a program that costs in the range of $50 (free trial versions are available from most Internet access providers). Microsoft offers freeware called *Internet Explorer,* which can be downloaded from the Internet and is also included with Windows 95 Plus!, the accessory package for Windows 95. The major national on-line services (*e.g.*, CompuServe, America On-Line, Prodigy) offer browsers as part of the software package included with service.

The most difficult decision for many first-time Internet users is selecting a service provider. A major, perhaps overriding, factor is the availability of a provider in your local calling area. For nearly all urban and suburban areas, local access numbers are available from more than one provider. In rural areas, local access may not be available. Accessing the Internet with a long-distance toll call can be prohibitively expensive.

In very general terms, the Internet service providers can be divided into two groups: national on-line services and local access providers. The national on-line services offer, in addition to Internet access, a multitude of information services such as news, weather, interactive forums, games, e-mail, electronic reference libraries and more. These information services are stored in the computer of the national on-line service rather than the Internet. All of the major national services provide free access and information management software that simplify access to both the service and the Internet. Most offer packages with 5-10 hours of access per month for about $10. Additional access usually costs from $1–$3 dollars per hour. Local access providers typically offer only e-mail and Internet access and have considerably less technical support capabilities. In general, however, local providers offer packages that include lower access charges. They sometimes provide much better performance.

The general trend for users is to start with a national on-line service and to switch after a period of time to a local access provider. Experienced individuals know that surfing the Web is often rewarding, but it is always time-consuming and they become attracted to the lower-priced packages offered by the ISPs.

For beginners, it is not a bad idea to start with a national service, take advantage of the 5 to 10 free hours of Internet time that comes with a subscription, make use of the organized information resources, then switch to a local access provider for more extensive Internet use. The experience gained from the national service will be useful when getting on-line with a local provider (many ISPs, such as UUNet, Netcom and others, are national but do not offer an information service in addition to Internet access).[1] Many people maintain their national on-line service account in addition to their ISP account.

When seeking a local provider, consider several things. First, the types of services that most users require are referred to as a PPP (Point- to-Point Protocol). Second, make sure that the company you choose has 28.8 bps access and that the number your computer will be dialing to connect is a local, no-charge number. Third, consider price and the number of Internet hours that you will be allowed for that amount. Prices have been dropping during the past year and the number of connect hours has been rising. Many ISPs provide a range of access packages. A typical package may offer 100 hours of access time per month for $20. Fourth, because some ISPs have developed a reputation of poor service, it usually is a good idea to start off with a telephone contact. If no one answers now, no one is likely to answer later, when you have a problem.

Many individuals have difficulty getting on-line with a local access provider. The Resource Center offers its members personalized technical help with Internet access. Technical help may also available from your access provider.[2]

NMFRC home page address:
http://cai.eclipse.net/home2.htm

Next month we will provide some details on using the basic tools of the Internet, including browsers, e-mail, search engines, and FTP (file transfer protocol). **P&SF**

About the Authors

William D. "Bill" Bonivert is a member of the technical staff at Sandia National Laboratories, Livermore, CA. The immediate past president of AESF, Bonivert has been a member of the Santa Clara Valley Branch for 16 years and is active in the Golden West Regional.

George Cushnie is vice president of CAI Engineering, Oakton, VA, the contractor for the NMFRC project. He also serves on the AESF Research Board. Cushnie holds technical and engineering degrees from the Florida Institute of Technology, the University of Florida, and the University of Virginia. He has worked in the areas of metal finishing pollution prevention and control for 17 years.

[1] If you are interested in finding a local access provider, contact the Resource Center (1-800 at NMFRC). We will fax you a list of local companies and pricing information.

[2] If you have questions that you would like to see addressed in these articles, submit them via fax to 510/294-1039 or e-mail to wdboniv@sandia.gov.