

derivatives. Given the likely increase in publications, necessitated by a more pro-active research stance within the department, greater use of the services of this unit by faculty is anticipated.

New trends in our services include: redesigning maps generated at the conclusion of a GIS operation to meet publication standards; becoming more familiar with the graphics components of particular GIS packages in our department so that we may better advise students and faculty regarding the cartographic capability of the software; and designing maps for web presentation in addition to published form ... and we'll do it all "without the use of pen and ink!" □

#### ARE YOU COMPATIBLE WITH YOUR PRINTING SERVICE BUREAU?

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University cartography laboratory managers often utilize printing service bureaus for color proofing and print production. This requires the cartographic laboratory manager to have an intimate knowledge of the service bureau(s) with which he/she works. This knowledge should include both general knowledge of the printing processes, and specific knowledge of the equipment, software, personnel, workflow, and requirements unique to each individual service bureau.

The University of Akron (UA) Cartography Laboratory produces in-house, individual color prints up to 11 inches by 17 inches. Other printing tasks require the use of off-campus service bureaus. The UA Cartography Laboratory

primarily uses two local service bureaus. The first of these is a full-featured commercial printing company located near campus. Printing jobs that require press runs and a size of no greater than 30 inches are taken here. The second service bureau is an engineering/CAD oriented service bureau. Printing jobs requiring individual color prints of more than 11 inches by 17 inches on paper or transparencies are taken here. This CAD oriented service bureau also performs mounting and lamination services.

The relationship of the UA Cartographic Laboratory to both of these service bureaus, while often involving a variety of production processes, different software packages, and variations of desired output, revolves around a central issue of "compatibility." Compatibility is critical during the production process, for the choices of file and font formats, for the desired end result, and in the choice of external media used to transport the from one location to another.

Compatibility in the production process is important since methods and procedures used must result in digital files from which the final artwork can be successfully produced. This remains important whether the production is via a press run or printed individually. Requirements for compatibility differ from one service bureau to another. For example, if the UA Cartography Laboratory uses AutoCAD to create digital files for a large wall-size map, it is important that each different color appearing on the map is created on a separate "layer." Since the CAD oriented service bureau uses specialized software to assign colors to objects in the digital file, it is more efficient to assign colors to each of the layers created during the production process.

Another important facet of production process compatibility, regardless of the service bureau, is

proper closure of filled polygons. Improperly closed polygons can at best, appear incorrect on the final print and at worst, cause the file to print improperly, if it prints at all. A thorough mastery of polygon creation commands and methods combined with careful editing and checking will result in fewer printing problems.

Compatibility in the exchange of file formats and fonts between the digital prepress files and fonts and those used by the service bureau is important. The full-featured printing service bureau used by the UA Cartography Laboratory generally requires conformability to the Adobe standard. This means that graphic files should be compatible with Adobe Illustrator and that fonts used should be Adobe Type 1 fonts. It is possible that other formats will work, however, their use increases the risk of unforeseen problems and delays. If there is any doubt about font compatibility, our service bureaus prefers to eliminate the problem by converting all text to curves or to paths. File formats are also important to the CAD oriented service bureau. They support several versions of AutoCAD, Microstation, and CorelDRAW along with other software in order to directly read client files. If the client has produced files with other software, an import/export file format such as the .DXF format must be used.

Another important form of compatibility relates to the desired final product. What is desired must be compatible with the capabilities of the service bureau. For example, it is important to know early in the planning stages of a map sheet with desirable dimensions of 32 inches by 36 inches that the commercial printer is not able to do a press run of material larger than 30 inches by 30 inches. Parameters such as size, type of paper, type of coating,

number of colors available on the press per run, etc. are all factors that must be considered early in the project's planning stages.

Upon the completion of a project's production phases the file(s) must be transported to the service bureau. It is important to know the types of external storage media that are compatible with the service bureau's equipment. Most full-featured service bureaus are equipped with a variety of devices and media for transporting and archiving files. Small files are often transported via floppy diskettes, however, since graphic files, especially bit-mapped files can become quite large, other media (including Bernoulli and Syquest cartridges) are used extensively by service bureaus. Other storage media suitable for file transport include CD-ROM disks and data tapes. Recently, magneto-optical disks or cartridges have received a great deal of publicity due to their lower prices, improved performances, and expanding capacities. It is important to consult with your service bureau to find out the devices they use and support.

Finally, personal compatibility is perhaps as important as technical compatibilities. Personnel compatibility evolves through a sincere, business-like, yet cordial relationship of mutual respect and trust. If this type of relationship can be initiated with the service bureau by the cartographer and fostered over an extended period of time, mutual benefits are realized. The service bureau benefits by receiving files that are less likely to be problematic. The cartographer benefits by gaining a better understanding of what the service bureau does and what is required in the production stages of a project to obtain a better result. □

### map library bulletin board

PATTEE LIBRARY, PENN STATE UNIVERSITY AND THE ASSOCIATION OF RESEARCH LIBRARIES GEOGRAPHIC INFORMATION SYSTEMS LITERACY PROJECT

by Melissa Lamont  
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At a quick glance, libraries may appear to be unusual places to find Geographic Information Systems (GIS). Yet, as mapping and GIS software have evolved and become more user friendly, libraries have become more technologically sophisticated. At the same time, libraries in the United States received an added push from the federal government. In theory, government agencies are to furnish copies of their publications to the Government Printing Office for free distribution to some 1400 depository libraries. These depository libraries agree to hold the information and provide it to the public. In practical terms, although a large number of government publications and data sets are deposited with the libraries, agencies use a variety of means to circumvent the law. Traditionally, depository librarians have found it necessary to lobby, hard, to assure public access to government publications. As the Census Bureau developed the TIGER Line Files, librarians strongly encouraged the agency to include the data files in the depository program. Admirably, Census complied. Thus, hundreds of libraries now hold TIGER files.

Unfortunately, the viewing software first issued with the TIGER file disks was slow and inflexible. Librarians began to

charge out the disks, like books, to users. The directors at the Association for Research Libraries (ARL) recognized the TIGER Files as an opportunity for libraries. They negotiated a partnership with the Environmental Systems Research Institute (ESRI) and created the ARL/GIS Literacy Project [see the Map Library Bulletin Board, *Cartographic Perspectives* 1993 (14): 18-19]. ESRI provided software and training and the libraries agreed to provide feedback to the company and make the software and data available. The response from libraries was overwhelming. At the present, over one hundred United States and Canadian libraries are involved.

For many libraries, GIS has fit naturally into services already provided. Libraries provide a neutral ground for researchers and casual users. Some disciplines, such as history or economics, may have interesting GIS applications but may not need their own fully operational laboratories on a permanent basis. Likewise, small businesses often cannot afford the hardware or personnel to manage a mapping system. The library can meet the need of the non-traditional GIS clientele. In addition, libraries have always sought and held data—they search out information, provide the documentation or metadata, and make the information available to users. Many libraries view spatial data, and other data sets, as another format to acquire, catalog, and provide to the public.

Of course, the range of services and levels of expertise at each library will be different. At Penn State's Pattee Library we are working with the Center for Academic Computing and the Department of Geography to install a spatial data center. With a server located in the Maps Room, we will actively collect data (at first primarily Pennsylvania based