

cartographic techniques

Working With Your Printer

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Introduction

The printing industry has experienced significant changes over the years. In an industry where key lines, paste-ups, rubyliths and overlays were once everyday fare, the introduction of electronics has changed the methods used to prepare jobs to be printed in all phases of production, namely pre-press, printing, and finishing. While printing presses and finishing equipment have improved over the years, the actual steps used to get the job ready for press have changed dramatically.

There are several necessary steps or decision making areas required to successfully print the maps and literature designed by cartographers today. This article is divided into sections that deal with each of these areas.

Proofing

Proofing and reviewing of your files is an essential part of the printing process and by taking care to do it properly, you can save significant time and expense. As your job is readied for press, i.e., before the printing plates are made, this is your last chance to review every detail from content to color.

There are several proofing methods available today. One important item to note is that all proofs are a simulation of how the final map will look. In particular,

the paper you choose to proof your map with may not, in some cases, be able accurately represent certain colors of ink. To help you choose the best proofing method for your map, here are three and their pros and cons.

Kodak Approval Proofs

Kodak Approval proofs are considered the best predictor of colors from proof to the printed sheet. This is a dot proof, meaning it will have the same dot pattern and line screen as the printed job. Approval proofs also can be used to check trapping and all content. Some printers have the Kodak Approval XP Recipe Color proofer. This device allows the printer to simulate most of the PMS (Pantone) colors including metallic colors. The one limitation of this proofing method is its size is limited to approximately 20" x 24". For larger maps, the printer may either tile several proofs together to reach the correct size of the map, or a reduced-size proof can be made for review. While more expensive, this proof may well be worth the investment:

Digital Inkjet Proofing Device Proofs

Digital inkjet proofs can be a good alternative to a Kodak Approval proof, and inkjets offer most of the same benefits. There are several high quality digital inkjet proofers available today from manufacturers like Epson, HP, Canon, etc. These devices are very good predictors of color, however, while most cannot show the actual dot pattern and line screen used for printing, they can be used for checking color, trapping, and content. One big advantage to this type of proofing device is the ability to make large proofs. Most devices are only limited to their maximum width but can go as long as needed. Therefore, proofs as large as 60' wide are possible.

Another important consideration is their relative cost is about one half the cost of a Kodak Approval proof.

Inkjet Printing Proofs

Standard inkjet printers produce a lower resolution proof that can be used only for checking content and as a final folding "dummy" of the map. This type of proof should never be used to make decisions about color, as they are not an accurate predictor of how color will look on the printed sheet.

Printing

After final proofs have been reviewed for color trapping and content, it is time to make the printing plates. A simple rule of thumb to remember about the cost of printing is, the closer you get to the final end product the more costly a change will be. One way to think of this is that at the time the cartographer is building the electronic file, it is simple to make a change to the map. If, however, a change is needed or a problem is discovered when you're on-press, a number of steps need to happen to fix the problem:

1. The cartographer will need to make the changes to the file.
2. The pre-press department will need to update the printing files.
3. New proofs must be reviewed.
4. New printing plates will have to be made.

So, it can be very expensive to make a change once printing begins. This just re-emphasizes the point of needing to be careful and thorough in reviewing proofs.

If possible, you should be present at the time of printing. This is a great time for you to learn more about the various printing process-

es and you can use that knowledge to your benefit when creating new maps in the future.

When attending a “press check”, there are some best-practices checks to follow in reviewing the first off-press sheets:

1. First, check all content and double check any last minute changes.
2. Then start to review the colors. Usually some variances between proof and the printed sheet will occur. This is normal, as proofs are designed to *simulate* color. But they should look like the proofs you have approved. If not, tell the printer what you see. Though it will be tempting, try not to tell the printer which colors to adjust. Rather, indicate the printer the job looks too “bluish” or too “greenish” or whatever it is you see that you don’t like. It is the printer’s responsibility to know which of the four process colors need adjusting to address your concerns.
3. Check for a row of small color squares across the edge of the printed sheet. These are color control bars used by printers to monitor and control color consistency throughout the run. Most good quality printers use them not only to control color but also as a means of recording the values that can be used for reruns. If these bars are not present, ask the printer why.

Folding

The final stage in producing your maps is trimming and folding. Good planning is critical when laying out maps. Work backwards. What is the desired final folded size? What needs to appear on the

outside front and outside back panels? Is there advertising space within the map? Where are the ads to be placed?

These things can be very difficult to envision, so use a folding dummy from your printer made to the actual size of the map. Getting the printer involved in the early planning stages can save a lot of problems and surprises later on in the production processes.

Accordion folding is the most common type of fold for maps. It is the most efficient and the least stressful on the paper. Also, it is the easiest for the map-reader to use, allowing them to review sections of the map without unfolding the whole map. Special folding configurations can be done, but check with your printer first. If special folding equipment is needed, but is not available, publication costs can be increased significantly.

Papers

Choosing the type of paper or synthetic material to use can be challenging. Is a material that is water, chemical or tear resistant necessary? Consider how the map will be used, who will be using it, under what conditions, and how much wear and tear will it endure? Is it a road map living in a glove compartment to be used by the casual traveler? Or will a hiker be pulling it out of their backpack to refer to it while traversing the trails through Yellowstone National Park?

The types of papers commonly used are broken down into three categories: *Offset Uncoated* paper, *Gloss Text* paper and *Synthetic Materials*. This by no means covers all of the available choices; it is only meant to create some awareness of each, and what the characteristics of each are.

Offset uncoated

Offset uncoated paper is the most common paper used for maps. It is relatively inexpensive and is the least durable of the papers in this discussion. Offset uncoated papers will absorb the inks resulting in softer and more subdued colors on the printed sheet. If the map being published has a short life cycle, or if you are building in planned obsolescence, this might be the correct paper for your map.

Gloss text

Gloss text papers are a very common alternative to offset uncoated papers. Gloss text provides good color matching to the proofs. The colors will appear bright and rich and should closely resemble your Approval or Digital Inkjet proofs. Because of the coating this paper will be a little more durable than uncoated offset papers. Gloss text papers are only about 15-20 percent more expensive than uncoated offset papers.

Synthetic materials

Synthetic materials provide greater strength and durability, including some with water, chemical and tear resistance. Most will print much like gloss text and will show color much like the proofs. Hop-Syn, Polyart, and Tyvek are a few of the more popular synthetic materials used today.

The relative cost of synthetic materials can vary greatly. Some can be as much as ten times more expensive than uncoated offset papers. If a synthetic material is desired, work with a printer who has experience printing onto synthetic materials. Special inks, trimming, scoring and folding requirements might be needed depending on which synthetic material you’re interested in using.

Conclusions

By choosing an attentive printer and actively participating in the print process you will learn how to effectively plan successful printing projects. This article covered the basic areas that require your attention and described the places in the printing process where you can gain valuable experience by working closely with your printer. Printing maps is ideally a partnership between skilled map makers and printers; and when you are in such a partnership with your printer success in your projects is almost guaranteed.

map library bulletin board

Building a Digital Collection of Photos and Maps: Milwaukee Neighborhoods at the University of Wisconsin-Milwaukee Libraries

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Introduction

Milwaukee Neighborhoods: Photos and Maps 1885 – 1992 was created at the University of Wisconsin-Milwaukee Libraries (UWM Libraries) as a result of cooperation between the Libraries staff and the faculty at the Department of Geography. The goal of the digitization project was to gather unique material from the Librar-

ies' collections featuring Milwaukee neighborhoods, convert it into a digital format, and present it as an online resource to students, faculty, and the general public. The digital collection, available at <http://www.uwm.edu/Library/digilib/Milwaukee/index.html>, provides a visual documentation of the development of Milwaukee neighborhoods.

Drawn from several source collections at the American Geographical Society Library and the Archives Department at the UWM Libraries, the project includes 638 photographs and 12 historical maps of Milwaukee. The maps and images were scanned and integrated into an online system through indexing and descriptive metadata. An extensive research process accompanied digitization to provide not only a consistent description of all images, but also additional access points for image discovery. Following the collection release in March 2004, an evaluation study was conducted to examine user behavior in the resource discovery process and to assess user satisfaction with the collection.

This paper will report on the collaborative nature of the digitization project and will provide an overview of the process of building the collection including selection, scanning, research and indexing, and design of the online collection. It will also explore the usefulness of the collection from the faculty perspective.

Cooperation with Faculty

UWM Libraries initiated a digitization program in the fall of 2001 to take advantage of the rapidly evolving imaging and communications technologies and to share unique resources from the Libraries' holdings with a wide audience. Expanded access and reduced handling of fragile archival materials were recognized as primary

benefits of digitization (Smith, 1999). In addition to the Archives and Special Collections, the UWM Libraries house the American Geographical Society Library with its extensive map and photographic collections.

While work on the pilot digitization project was being completed in 2002, the Libraries staff began to informally survey the faculty on the campus about their interest in digital collections and use of visual resources for research and instruction. Two digital projects resulted from this initial inquiry: *Transportation Around the World: 1911 – 1993* (<http://www.uwm.edu/Library/digilib/transport/index.html>); and *Milwaukee Neighborhoods: Photos and Maps*, the topic of this article. When Geography Professor Judith Kenny suggested the second project, the proposal received the immediate approval and support of the Libraries staff. Based on discussions with faculty members, reference inquiries, and library instruction sessions, the demand for such a digital collection appeared quite obvious. Currently, architecture, geography, and history students among others regularly require materials on local topics for class projects. Ironically, students often find it more difficult to locate images or maps of local areas than of distant cities or countries. Although a few students visit archives or special collections, increasingly they turn to the Web as a primary source of information. According to Steve Jones's study on the impact of the Internet on college students "nearly three-quarters (73%) of college students say they use the Internet more than the library, while only 9% said they use the library more than the Internet for information searching" (2002). Digitization has offered libraries an unprecedented opportunity to meet the students in the space of their choice and reach a wider audience.