GREAT FALLS TRIBUNE
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River's Edge Printing & Distribution

Basic Guidelines for Cold Web Printing

We use the SNAP specifications. Here are a few suggestions taken from the SNAP Guidelines:

What is SNAP?

The Specifications for Newsprint Advertising Production (SNAP) are designed to improve reproduction quality in newsprint production and provides guidelines for the exchange of information. SNAP is intended for advertisers, advertising agencies, publishers, pre-press managers, material suppliers, and commercial and newspaper printers.

The specifications pertain to proofing and printing for all newsprint production on webs of paper, including offset lithography, direct lithography, letterpress, and flexography for a wide variety of products (e.g., newspapers, preprinted advertising inserts, and other printed material). SNAP is not intended for magazine, catalog, packaging, or direct mail printing, nor is it intended for sheet fed, gravure, or heat set web offset processes. Other specifications have been developed to provide guidance for these processes. *

** Full PDF version of the SNAP Guidelines is available (its 98 pages). If interested please let us know.*

Design Guidelines Typography and Rules

Selection and placement of rules and type can have a critical impact on any print job.

When working with rules and type, consider the following criteria:

- ***Readability,*** which encompasses such factors as writing style, the typeface (serif or sans serif), and legibility of the printed message.

- ***Legibility,*** which affects how quickly and accurately readers recognize type. Legibility is determined by typographic features such as the typeface, type size, letter spacing, line length, leading/interlinear white space, paper color, and ink density.

- ***Printability,*** which describes how efficiently a piece can be produced. Poor printability caused by any process component, including the piece's design and typography, typically leads to longer production time, higher waste, and additional cost.

- ***Profitability,*** which is often the measure of success of a printed piece. Each link in the production chain--from advertiser to supplier--either makes or loses money on every job. Type and rule selection, as well as placement, can affect this key measurement.

Here are some guidelines to improve reproduction quality and efficiency.

Fine Rules and Small Type

Rules that are 4 points or thinner, as well as small type, should be reproduced as one color only. Small type is defined as:

- sans-serif type that is 7 points or smaller

- serif type that is 12 points or smaller

- fine-serif type, such as Bodoni, that is 14 points or smaller

- Sans-serif type is the best choice for newsprint reproduction.

Reversed Rules and Type

Type smaller than 12 points should not be reversed on a four-color background and type smaller than 10 points should not even be reversed on a single-color background. Serif type and fine-serif type should not be reversed at sizes smaller than 12 points, and even in cases of larger type, testing should be done to verify whether the process can reproduce the serifs. For contrast and readability, reverse type should not be positioned within screened areas containing less than a 70% screen of any one, two, three, or four colors. Type should not be reversed on a yellow or other light-colored background.

Screened Text

When reproducing text as a screen percentage of a solid color, avoid type styles with serifs or with a fine to medium weight. Generally, text screened at 80% or more will reproduce as a solid. Consider the effect on legibility before attempting to screen type as a light screen tint.

Surprinted Type and Tints

To assure readability of rules and type that are overprinted on a tint background, the tint background should be no more than 25%. Pre-press service suppliers should create these tints keeping dot gain/TVI in mind. These flat tints will reproduce darker on press than on a display monitor or on most proofing systems. It may be possible to specify higher tint values when using mainly magenta or yellow tints. The originator of the films and/or files should consult with the newspaper or printer about tints before creating the file or film. The background should not be knocked out in areas of 12 points or less. For larger bold text or headings, background screens should be trapped behind black text to hide misregister and show-through of background colors.

Tints or color builds should be adjusted to take dot gain/TVI into account.

Image Trapping/Spreads and Chokes

Image trap should be 0.005 inches or higher. One inch is approximately 72 points; one point is approximately 0.013888". To achieve image trap of 0.005", file originators should use a minimum of 0.36 points for trapping settings.

When type is reversed out of more than one color, the darker color used in the tint build should be kept constant and the lighter colors used in the tint build should be spread to prevent any visible misregister.

In general terms, file originators should allow the darker color to define the image or shape and either spread or choke the lighter colors to accommodate the darker color.

Margins

SNAP recommends that a margin width of not less than 9116th of an inch be placed on both sides of a page printed in the direction of the web. For a broad sheet / standard product this guideline applies to the vertical (sometimes called the gutter and face) margins on either side of the page. For a tabloid product this guideline applies to the top and bottom (sometimes called the head and foot) margins on the page. These unprinted margins are needed because coldset press lines use nip rollers that pull the printing web through the press with very high pressure. These nip rollers are placed on these margins. If printing occurs in these margins then the roller pressure causes a substantial increase in set off and marking. The overall quality of the advertisement will look cleaner if this margin width guideline is followed.

Photography

Unlike photography for exhibition, photography and image capture for reproduction requires an understanding of the needs of subsequent processes. Guidelines to assure the best results are available in the full SNAP PDF version.

Image Capture and Selection

A high-quality image cannot be reproduced on a press unless a high-quality image has been selected from the start. The human eye, camera film, and digital cameras are able to capture a wider range of tones than can be reproduced using the printing process. Here are some guidelines for taking and selecting images for newsprint reproduction:

Photographers should strive for middle tones in the critical elements of a photo because newsprint printing is able to image only a density range of about 1 .lo. Darker areas tend to fill in or "go solid;" lighter areas tend to disappear or get "blown out."

Shadow detail areas should be light enough to reproduce with 70% to 80% halftones.

Highlight detail areas should be dark enough to reproduce with 5% to 10% halftones.

Highlights and shadow details captured on film or digitally will be compressed at a later stage.

If possible, determine the important details beforehand and what can be sacrificed for accurate reproduction. Correct lighting is very important to ensure highlight and shadow detail during the prepress phase of image reproduction.

If a photo transparency is used it may lack contrast. A digital photograph may also appear to lack contrast on a monitor. In both cases these images will need to be optimized for the press during the prepress/imaging process.

Camera Settings

Each camera system has a wide range of custom functions to improve the camera's behavior. Below are settings that must be changed.

- Color Space - Change to Adobe RGB from sRGB
- In Camera Sharpening -Turn Off, the default is On.
- JPEG Quality - If not shooting the camera's RAW, always use the highest quality JPEG
- Adjust IS0 to the lowest setting for light issues.
- Adjust the white balance manually off a reference card.

Though not recommended, some organizations are using a consumer camera over 3 megapixels. SNAP recommends:

- Use optical zoom only.
- Use highest resolution available.
- Use backlight mode.

Tonal Range

Photographers should aim for a "full tonal range." Full Tonal Range means all tonal values from light to dark, including specular highlights (shiny surface reflection, also called non-detail whites). With a full-range original, print contrast is significantly increased since halftones are not required in the non-detail whites during the separation process (SNAP defines separation process to encompass transparency scanning and image manipulation in programs such as Photoshop). Separating images in this manner optimizes the full effect of the entire print range from the paper whiteness to the maximum ink total area coverage (TAC) density. Originals with excessive contrast may be visually appealing, but extreme contrast is usually detrimental to printed reproduction and can lead to loss of detail during the separation process due to tone compression. Over-duped originals generally have excessive contrast.

Lighting

Proper front lighting of the subject will increase printed detail and help maintain color fidelity. Such lighting helps position the subject toward the lighter, more distinguishable detailed region of the print range by providing detail in the shadow regions of the image. Uniform lighting throughout the photograph results in the best reproduction and allows detail to be maximized throughout the full tonal range of the image. Backlighting, in contrast, leads to a darker reproduction. Non-uniform or uneven lighting of subjects in the same photograph can pose separation problems because the process cannot maximize the reproduction of detail both in illuminated subject areas and in shadowed areas. Lighting that falls behind the subject is not a problem. The goal is a contrasting background that accentuates the subject matter. A background that is not lit will reproduce as dark gray or black, adding a sense of depth to the image.

Clarity and Sharpness

When selecting a photograph, art directors, artists, and other stakeholders should scrutinize the original picture or image to determine the level of image sharpness. For digital images, view at 100% in Photoshop and use the Info Palette to check shadow and highlight detail. For negative films, use a glass loupe and for transparencies use a loupe or projection.

Use of non-original copies of an analog photograph (also called duplicates); faster speed films, and enlarged grainy photographs all contribute to a reduction in the sharpness achievable in the printed reproduction. These photographs also have a detrimental impact on scanning because sensitive scanner optics cannot reliably sense the "pixelized" grain effect. Use larger format (2-114" or 4"x5") originals when making extreme enlargements or undertaking selective cropping of an image. With digital images, image sharpness can be affected by insufficient lighting or resolution, which can introduce grain into the image. Generally, the larger the original physical image or digital file, the sharper the final reproduction.

Flare and ***haze*** are also causes of color saturation loss in original images. Flare is non-image light that strikes the camera lens during the exposure process; this desaturates and washes out image colors. Backgrounds, strobe lighting, and camera angles can all contribute to an increase in flare. To prevent non-image light from striking a camera lens, the photographer should use filters, lens hoods and different lens angles. Haze is a normal atmospheric condition associated with hazy or overcast weather and, like flare, often reduces color brilliance. The extent of this reduction is a function of the camera angle and the amount of haze. A haze filter on each lens can help reduce the

effect of haze.

Background Contrast/Color

Background contrast in photography plays an important role in successful newspaper reproduction. White or highly reflective backgrounds can affect the critical exposure time that cameras need to record the light-absorbing details of the main subject. If not carefully managed, this light reflectance can introduce unwanted flare that causes loss of detail and de-saturation of colors. As an example, a bright white background can create loss of detail when photographing dark brown and black subjects. Backgrounds that provide contrast--but are not highly reflective--will enhance printed reproduction.

Digital Camera Images

Since most of the images are now digital, an established workflow, with Standard Operating Procedures (SOP'S), should be in place in the photo and pre-press departments to ensure consistency. Basic guidelines for capturing and color managing the image at the camera will help the overall reproduction quality of the images.

Consider the following factors for correct reproduction of a digital camera image on newsprint:

Digital camera images require proper exposure. A correctly exposed image will have good contrast and will reproduce well on newsprint. If the image is over-exposed, important highlight detail is lost. Underexposed images can increase noise. Fill flash is recommended because it dramatically improves the quality of the printed image by shortening the dynamic range.

When flesh tones are involved in the subject matter, make sure that they fall at the optimum point on the tone curve. On digital cameras, the LCD display, coupled with the histogram, make it easier for the photographer to determine where tones are falling on the curve. Pre-press departments can also use the histogram function in Photoshop to evaluate this.

The color of light is critical to the color of the image. That's why it's important to plan on having a portable lighting kit. When it isn't possible to control the light source, make sure that the resulting colorcast is corrected during the acquire step (SNAP defines the acquire step as the process where the image is imported from the camera to the image adjustment software) or in the first few steps of the photography toning SOP. If no consideration is given to the color of the light at the time the picture is shot then unsatisfactory color will result even with the latest digital camera technology. Set the neutral point by using the camera's Pre-Set White Balance function, before the assignment is shot. Use a neutral gray card shot under the same lighting conditions and with the same exposure that will be used for the subject. If the neutral point is set correctly, then neutral areas of the subject will remain cast-free.

Since digital cameras produce small files that will be enlarged, be sure to keep the IS0 as low as possible. Take pictures at IS0 200 whenever possible. When the IS0 increases, so does the digital noise. IS0 on digital cameras is not standardized the same when compared to film, think of it as a guideline, but each sensor (even from 2 of the same camera) will record light at different exposures.

Frame and tightly crop the image with the camera. Shooting the subject tight ensures that photographer captures every important detail needed for enlargement of the image.

Make sure that the picture is sharp and in focus for the key subject matter.

When shooting RAW, acquire the pictures correctly. The key points previously mentioned, contrast, tones, and color, are obtained during the acquire function. During acquire, the proprietary format used in the camera is being converted to an editable document. Using the Click Balance function, in the acquire software when shooting in the RAW format, is another way of eliminating severe casts. But be aware that an incorrect color balance setting when shooting PEGS will create partial colorcasts that will create major problems in Photoshop. Focus on getting the color balance right when photographing the subject.

Although the following guidelines might change on your specific workflow, some of the basic recommendations for image manipulation workflow include:

Always check the Photoshop settings before starting. All departments should be using the same settings, including color space.

Crop the image. Do not enter a height, width or resolution when cropping. This is the same as turning off the "fixed target size" in older versions of Photoshop. There is no need to resample image data at this step. This can be done later in the work flow.

Analyze the image with the Info Palette. SNAP recommends using CMYK data. Check the shadow and highlight areas for detail. Check a neutral in the image for a colorcast.

Use only Levels and Curves when making image adjustments. When adjusting contrast in Curves do not adjust the end points. Remember you are toning for newsprint, not the computer screen.

To Dodgeburn the image use the History Brush or the selection tools. Use the Feather feature set to a minimum of three pixels. Do not use the Dodge and Burn tool.
Images should be sharpened only once in the workflow, once final image size is known.
Save the image with the least amount of compression, based on SNAP requirements, in JPEG format.
Communicate image capture, procedures, acquire, setting, pre-adjustment settings between the photo and prepress to preserve the integrity of the tone curve on newsprint. There should also be open dialog between the two departments to ensure accurate reproduction of the digital camera images. SNAP recommendations are included in the full SNAP PDF version.

Final Output

If SNAP specifications have been followed, the screened tone values should have the following values. We use Offset 100lpi.

Screened Tone Values for Black & White or Single-Color Images

Tonal Area	**Offset (100 lpi)**
Specular/non-detail	0%
Highlight	3%
Quartertone	16%
Midtone	32%
Shadow	85%

Screened Tone Value for Four-Color Images

Offset (100 lpi)				
Cyan	Magenta	Yellow	Black	Tonal Area
5	2	2	0	Highlight
20	14	14	0	Quartertone
36	28	28	10	Midtone
60	50	50	80	Shadow