QUICK GUIDE TO

SCANNING PHOTOS

for keeps

PICTURES AND STORIES

picturesandstories.com

Hi there! We at Pictures and Stories believe that your life's pictures and stories are too valuable to lose, and our passion is to help you save them.

In the many years we have been creating personal and family history books for our clients, we have witnessed a deterioration in the quality and longevity of our most precious photographic memories as our society has shifted to digital capture methods.

It doesn't have to be this way! Digitization can help *preserve* photos for the future, if done properly. We created this simple guide for our clients who are scanning their own images for a book project. We thought we might as well share it with everyone.

Tom and Alison Taylor

For more detailed and up-to-date information, visit our blog at picturesandstories.com.

No ads, no spam, just instructional articles to help you write your life stories.

YOUR LIFE. IN A BOOK.™

WHY do you want to digitize your photos?

I want to preserve an archive for the future

Do you have a scanner?

NO

Would you grab these photos out of a burning building?

NO

YES

YES

Go to Using a Flatbed Scanner p 3

I want to share them with others

How do you want others to use the photos?

Download them and use them

Go to Using a Smartphone as a Scanner p 10

Your phone camera with backup is probably fine p 13

See them on social media and move on

I want to print them or put them in a book

Do you have a scanner?

YES

NO

SCANNING FOR KEEPS

Building a High-Quality Digital Archive to Preserve, Share, and Print Your Photos

1. Create a "digital negative" in a TIFF format.
2. Scan at 600+ pixels per inch for prints.
3. Make .jpg copies for web use only.
4. Identify your photos using metadata.
5. Back up using the 3-2-1 rule.
6. Share.

USING A FLATBED

Why you should scan in TIFF format

The TIFF file format (what comes after the dot in your image name) is the best format for creating a high-quality digital scan of a photograph or document.

Compression in a nutshell:

All digital files are compressed to save space. TIFF file format uses "lossless" compression, which means that it doesn't throw away any data (which could lead to a degraded image) when compressing your photo. A TIFF file will take up more space on your computer, but will ensure the best quality for your "digital negative." You can make copies of your TIFF negative in other formats (such as .jpg or .png) to use on the web or when you need a smaller or faster file.

JPEG or .jpg is the most widely used format. It was created to make photos upload quickly on websites. Jpeg uses varying degrees of "lossy" compression and if the photo is saved at a low-quality (high compression) setting or edited too much, it will show damage. If your scanner has no TIFF setting, you can use the .jpeg setting with caution. (See page 7.)

PNG or .png files are helpful to preserve transparency—such as a "cutout" object with a blank background that will be layered over another image. If you need transparency, make a .png (or .psd if you have Photoshop) copy of your .tiff file to create layers.

PDF format is used for printed documents. Most PDF scanners use high compression settings. Do not use the PDF setting when scanning photos.

GIF or .gif is used for animations and web graphics. BMP (bitmap) or .bmp files are sometimes used for black and white line art. Neither format should be used for photo scanning.

USING A FLATBED

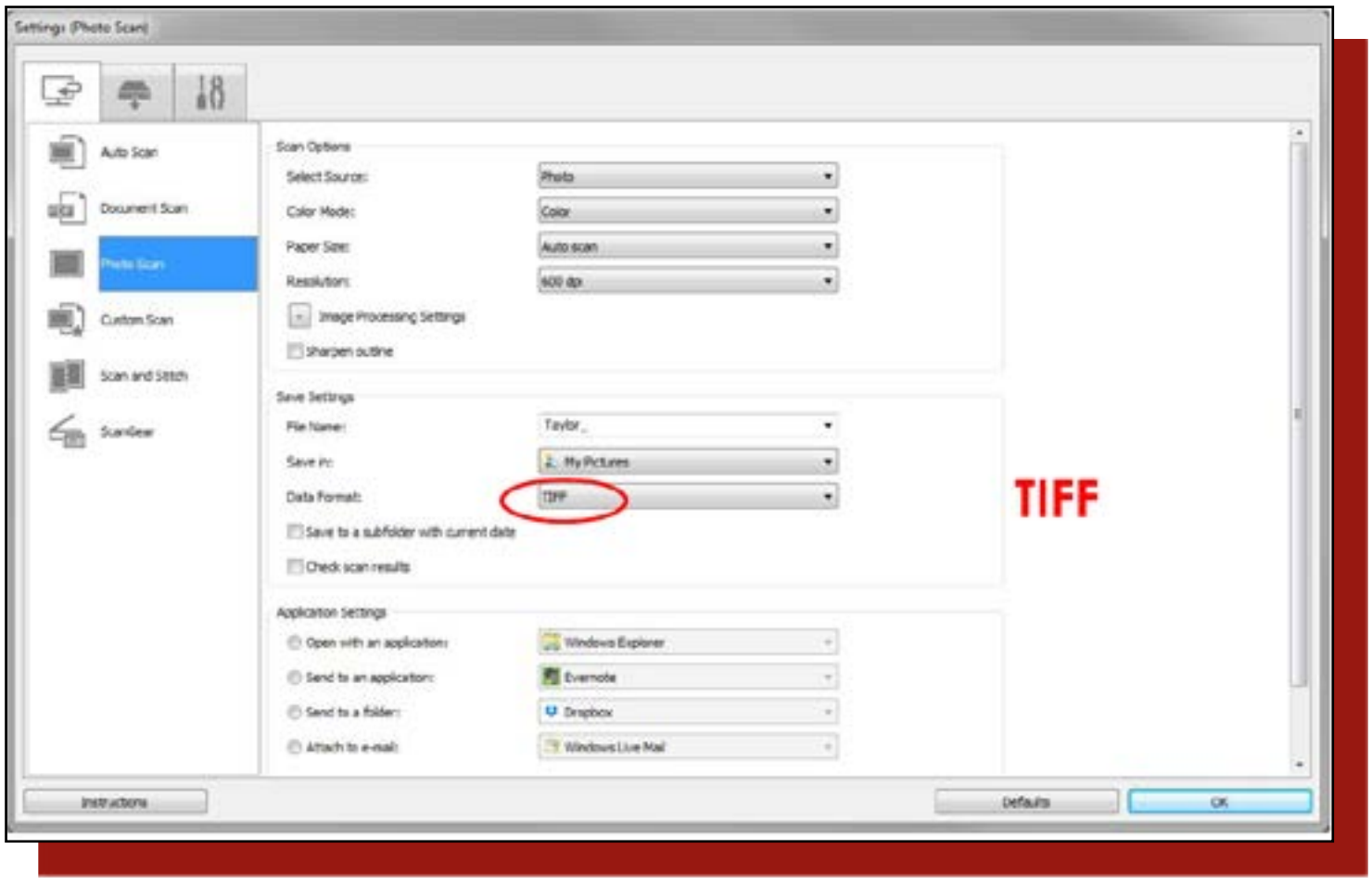
How to set your scanner to scan a TIFF

Every scanner is different, and we can't show you the settings for every scanner on the market. But here are some examples of what to look for in your scanner's advanced settings or user manual:

Data format: TIFF
Image format type: TIFF
Save as format: TIFF

This setting will most likely be in a pull-down field that gives you a choice of file formats such as .tif, .jpg, .png, .pdf.

If no TIFF or .tif is listed, you may have to look in your scanner's advanced settings or "save" settings. If your scanner has different modes for photo, documents, magazines, etc, then choose the photo mode, which may give you a tiff option.



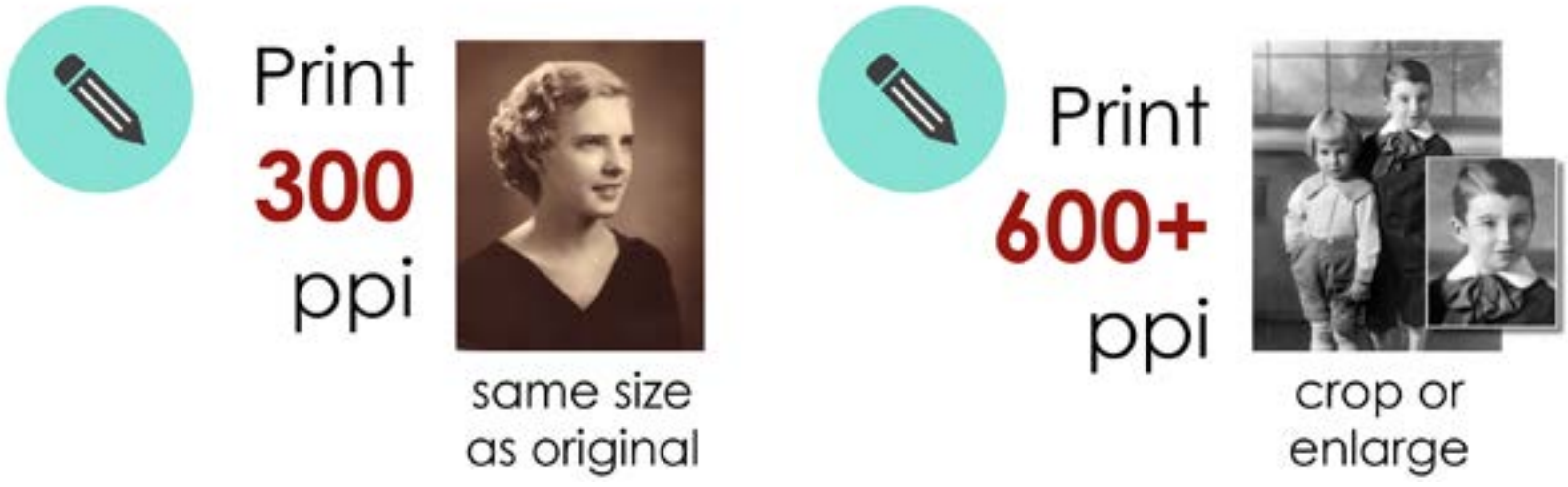
USING A FLATBED

Resolution: pixels per inch

As a rule of thumb, we recommend scanning photos at:

600 ppi or pixels per inch (sometimes called dpi)

Why 600? The minimum resolution you need to get a good-quality print reproduction of the original size photo is **300 ppi**. If you think anyone would ever want to enlarge or crop the original, then you need more pixels. If you scan all your photos at 600 ppi, you'll have a good chance of getting what you need for most of them. Better to have too many than not enough pixels.



If you have a tiny little print, say 2 x 3, and you want to blow it up to a full page size, you may want to scan it at **1200 ppi**.

35 mm slides, because they have such a small surface area, should be scanned at a minimum of **3200 ppi**. (You will need to use a dedicated slide scanner or have a special attachment to your flatbed to scan 35 mm slides.)

AVOID USING YOUR SCANNER'S DEFAULT, AUTO, "HOME" MODE, OR EASY MODE. Many scanners' default settings are set to 72 ppi (which is typical screen resolution) or 150 ppi. Auto mode usually also scans a .jpeg at a medium or low quality. This will not give you a good enough scan for print.

USING A FLATBED

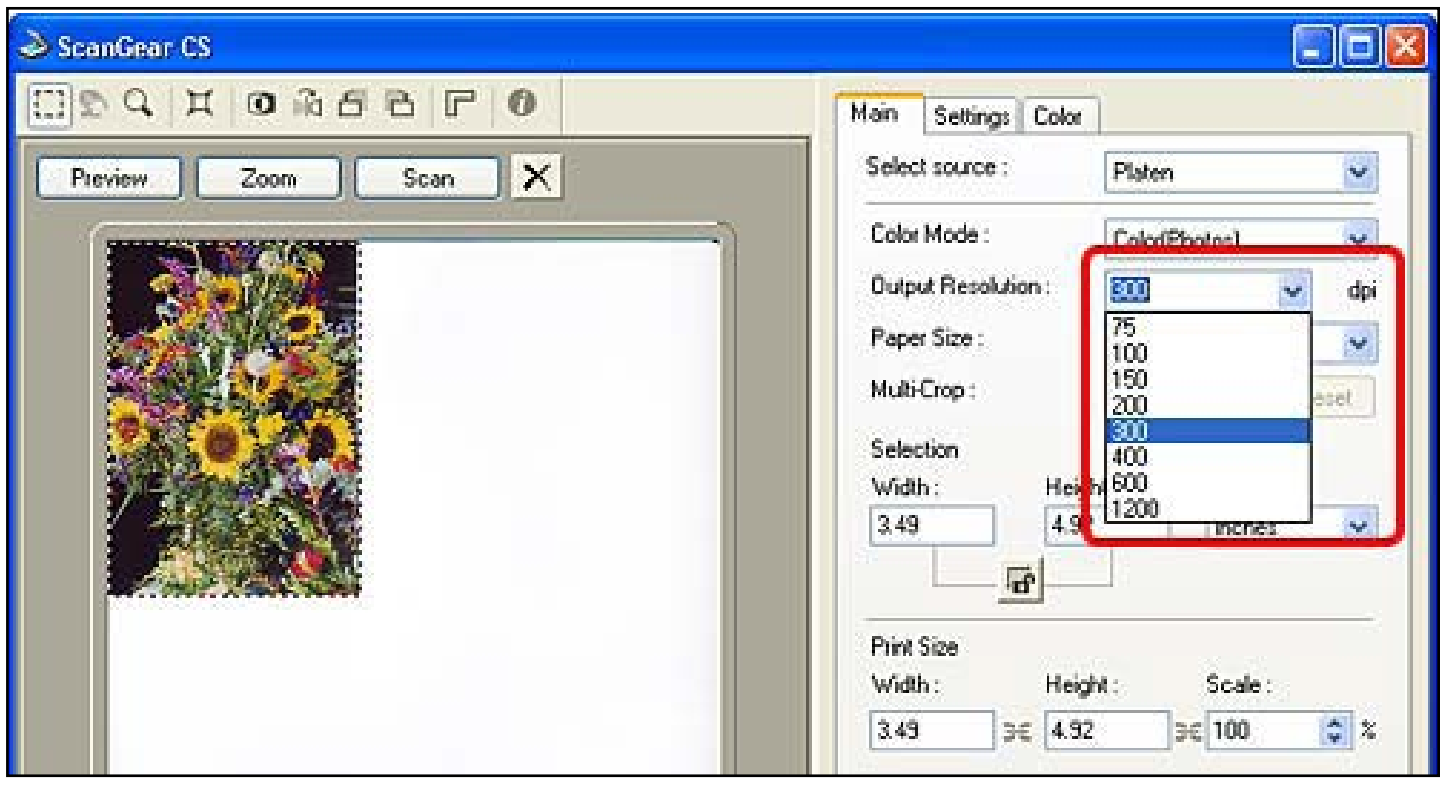
How to set your scanner's resolution settings

Every scanner is different, and we can't show you the settings for every scanner on the market. But here are some examples of what to look for in your scanner's advanced settings or user manual:

Resolution
Output
DPI or PPI

This setting will most likely be in a pull-down field that gives you a choice of numbers (75–4800).

If you are scanning a lot of photos at once and want to choose a "set it and forget it" resolution (or if you are having a scanning service scan your photos), **600 ppi** at the original print size is a good average. This will give you a bit of room to enlarge or crop without creating huge files.



IF 600 DPI IS GOOD, ISN'T 2400 BETTER? Not necessarily. Scanning a print (unless it's very small) at a very large PPI can create unnecessarily large files that can slow your computer or device.

USING A FLATBED

What if your scanner can't scan a TIFF?

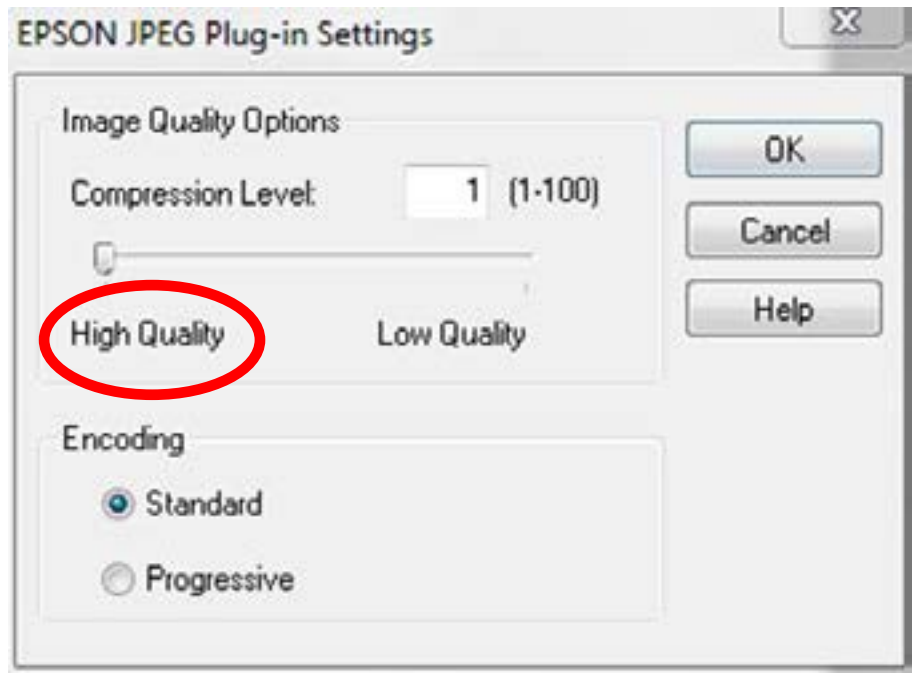
What if your scanner has no TIFF option, or you have an older computer that can't handle large files? It is possible to get a good quality JPEG scan, if you know how to scan them properly and how to care for them after scanning. You need to make sure you are getting the highest quality JPEG file available. Here are some examples of what to look for in your scanner's advanced settings or user manual:

JPEG compression
Output quality
Image quality options
Compression level

For more information about JPEG compression, see this post at picturesandstories.com

The options can vary greatly from one scanner to another. Always choose the highest quality/lowest compression setting. If there is a slider, slide it all the way to the highest quality (or lowest compression) setting.

Good - Better - **Best**
Standard - Fine - **Superfine**
Low - Medium - High - **Maximum**
1 - **12** or 1 - **100 (Quality)**
1 - 100 **(Compression level)**



STANDARD SOUNDS GOOD, RIGHT? Many scanners' auto or default settings scans a .jpeg at "standard" quality, which is actually quite low and has a high degree of compression. This will not give you a good enough scan for print.

USING A FLATBED

How to properly use and care for a JPEG

High quality JPEG file with minimal compression

Compressed JPEG file showing compression “artifacts”

Even if you have scanned your photo at the highest quality JPEG setting to reduce compression, your photos can still be damaged by improper use. Here are some rules of thumb:

- **Don’t open, edit, and re-save a JPEG.** The file will be further compressed every time you save it, and you will start to see artifacts appear. Make a copy of your original JPEG to do any editing such as color correcting, cropping, etc. in a “lossless” format (such as .psd for Photoshop, or .png or .tiff). Then you can make another JPEG copy of the corrected file for web use if needed.

- **You can’t get back what’s gone.** Copying a compressed JPEG as a TIFF or increasing the resolution won’t help it look any better. You’ll just have a bigger damaged file.

NOTE: Many pro scanning services will return your scans as high quality JPEGs. Not to worry; just make sure you save the untouched originals and make copies before editing.

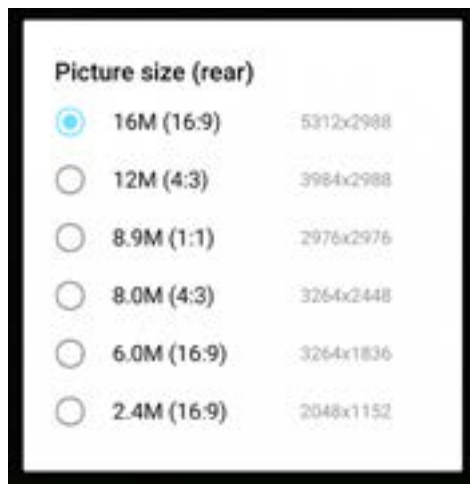
For more information about JPEG compression, see this post at picturesandstories.com

USING A CAMERA

How to get the highest quality from your camera or digital device

Built-in cameras in smartphones and tablets are very high quality and getting better every day. However, most current device cameras do use some compression, with quality settings not accessible by the end user. You will likely get fairly decent, although not archival quality, JPEG images from your device. You can keep them that way if you use the rules of thumb on page 8.

Many device cameras have settings that allow you to choose a size (resolution) for the pictures you take. Pick the highest setting if you are shooting anything you want to keep. (Feel free to use a smaller setting for a shot of your lunch to post on social media, but don't forget to set it back to maximum after!)



Samsung smartphone size settings

Digital SLRs also have quality settings:

RAW format files are uncompressed and require special software to process. High quality RAW files are usually used by photographers who want maximum control over their images and plan to do a lot of editing. (Some smartphones now offer RAW image options.)

Jpeg quality settings are L, M, and S, with the jagged or smooth curve that indicates compression. Make sure your DSLR is set to L with the smooth curve to really get the best from your camera. If you really need to squeeze a few extra shots on your card, choose a M size with smooth curve rather than L with compression (jagged).

USING A SMARTPHONE

Can I use my smartphone as a scanner?

In a word, yes—with caveats. If you are archiving important prints for posterity or want the highest quality, then please use a flatbed to scan your prints.

However, if you don't have a flatbed scanner handy, you can get fairly good results with a high-resolution smartphone.

Here are some tips to get the best quality image:

- **Be careful about using a scanning app**! Some 3rd-party smartphone scanning apps (such as Google Photo Scan) create a ***highly-compressed and distorted image and much smaller resolution*** than your native camera setting. There may be good scanning apps out there, but you can easily get better results by just using your phone's native camera app and following the suggestions below.

1. **Use your smartphone's largest resolution setting.**

2. **Turn off your camera's flash** and shoot the print or object in even light, such as the open shade of a building or near a window with a piece of white cardboard on the other side to fill shadows.

3. **Fill the screen** with the image as much as possible.

4. **Hold the phone at the same angle** as the print to avoid distortion.

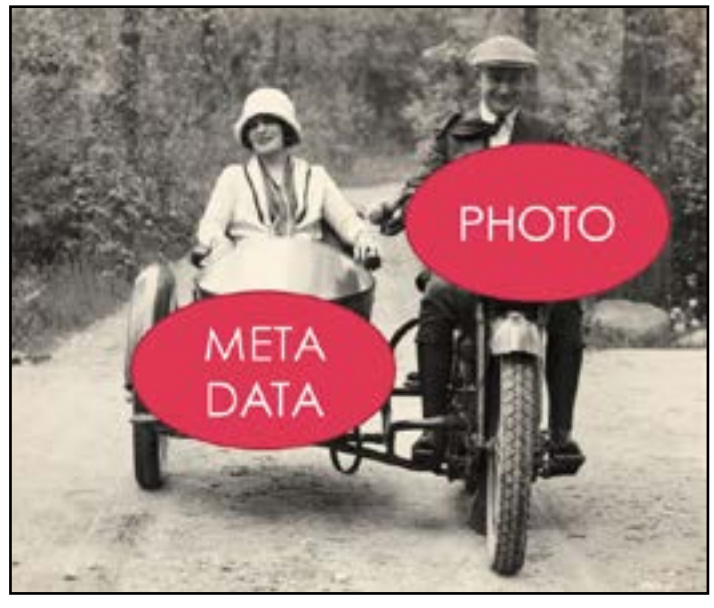
Place photo on a magnet board, on a chair in front of a window with white cardboard to reflect light evenly.

5. **If the print won't stay flat,** place the print on a magnet board or steel baking pan and use tiny magnets to keep the corners in place.

ADDING METADATA

How do I write on the back of a digital photo?

Metadata is digital information that becomes a part of the digital photo and travels with the photo when it is moved or shared. There are a couple of different types of photo metadata: EXIF is the data that is captured automatically by your camera or device (things like shutter speed, date, and location). IPTC or XMP data is metadata that you can edit to add things like captions, keywords, contact information, and copyright.



There are different apps and methods available to add metadata to your photos, depending on your device and platform.

If you are using Windows, adding metadata is a snap using the Details pane in Explorer. You can add search tags and use the Title field to add a caption and Authors to add your contact info.

It's easy to add metadata to your scanned photos in Windows (Win 10, shown above) using the Details pane in Explorer.

ADDING METADATA

How do I add metadata on a Mac? On my phone?

You can add some limited metadata to photos on a Mac computer using the native Photos app. But you can always use a third-party app to add metadata. If you have Photoshop or Lightroom, they work well. If you don't, we recommend using Adobe Bridge (a free download from Adobe) to add metadata in either computer platform. (See this post for instructions.)

There are a number of apps available for adding metadata to photos on your devices, and new ones are being added all the time. (InfranView is a popular shareware app.) One thing to look for when checking out apps: make sure that it allows you to edit ITPC metadata (to add captions), not just EXIF data (i.e. to modify the date the photo was taken). And test it out before you use it to add metadata to a lot of photos! Try sending your photo to a friend and seeing if they can read the metadata.

If you want to get your photos scanned right away but don't have time to add the metadata now, scan the backs so you'll at least have the information for later use.

Don't let this happen to your photos!

For more details, check out this blog post and presentation that covers the subject of metadata in detail.

ORGANIZING AND BACKUP

Make sure your digital scans will last.

There is nothing more heartbreaking than losing years of family memories due to a single hard drive crash. Don't let it happen to you!

Follow the "3–2–1" (minimum) rule of backup:

3 total copies =

2 different formats (internal & external hard drive, flash or DVDs)

+

1 offsite storage (cloud storage or safety deposit box)

Automatic cloud photo backups for your mobile devices are always a good idea, in case you lose your device. Activate your device's native backup or use a 3rd party app or service like Google Photos.

ORGANIZING AND BACKUP

Have an organizing system that makes sense to you.

You can use **photo library software** such as Photos (Mac or Windows versions) or more sophisticated programs such as Adobe Lightroom to organize your photos. These apps can help organize your photos using dates, tags, or even face recognition. Many of these options are also combined with cloud storage to sync across all of your devices.

Be aware that sometimes library software can make things confusing when you remove photos from the library environment—for instance, photos may not stay in the same order when you put them on a flash drive to give to someone else.

If you are looking for a simpler option, you don't need any special software. Just create your own system of folders on your computer in a way that makes sense to you. Here's an example of how I might organize scanned folders photos for a family history project:

Whatever method you choose, just make sure you update it regularly and back it up!

SHARE YOUR PHOTOS

Generosity equals redundancy

Once you have gone to the trouble to scan your photos, sharing your files with others is one sure way to protect them from loss.

Share with your loved ones

You may not want to share personal family photos online to the public. But you can and should share them with your loved ones. Many **cloud storage photo options** offer easy ways to share photos with others to view or download.

You can also consider creating a **tangible digital archive** to share with your loved ones. (See page 17.) Combining print and digital media is a great way to make sure that your photos are not only accessible, but easily enjoyed. An archive also makes a great gift for family members!

Don't forget about print! A **printed book** will last for generations, requires no hardware or software, and will never be obsolete.

Share with a wider community

Especially if you have scanned photos that may have **historical or genealogical research significance** to others, please consider uploading your photos to a site such as Ancestry.com or FamilySearch.org. (Note: FamilySearch can even accept uploaded Tiff files up to 15 MB in their Memories section). You may have an unknown cousin who is researching your common ancestor and who would be thrilled to find a photo you've uploaded. Your generosity will come back to you in ways you never imagined!

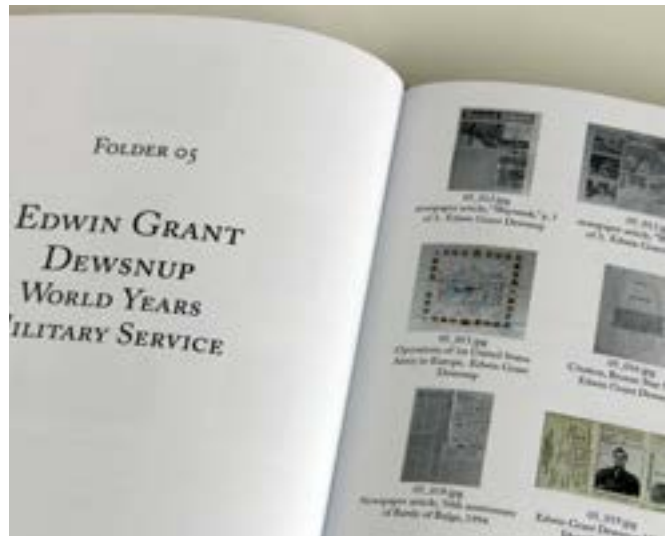
SHARE YOUR PHOTOS

Create a tangible digital archive.

Give us your boxes and let us turn them into useable, sharable digital archive! We provide complete digital archive services, including organizing, scanning, adding metadata, and safe storage solutions.

We return the originals to you in archival storage boxes, along with a hardcover index book and two forms of digital storage media. We can even upload your photos to cloud storage and genealogy sites if you desire.

Additional archive copies are available and make great gifts for family and friends.



Hardcover archive index books show you what you've got and where it is on your digital media. A thumbnail of each photo, with caption below, corresponds to a high-resolution digital scan on the accompanying storage media.

SHARE YOUR STORIES

Now that your photos are digitized, don't forget about preserving your best life stories.

Since 1996, Pictures and Stories has been helping our clients find their most important stories and pictures and preserving them in stunning custom coffee-table books and videos.

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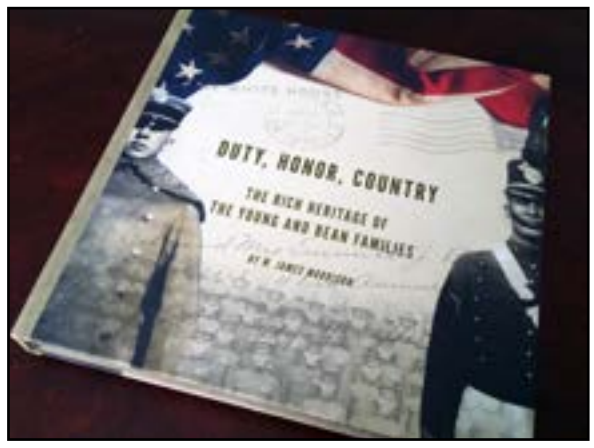
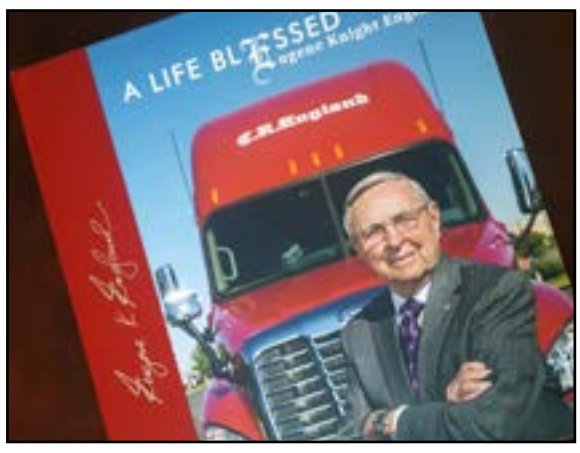
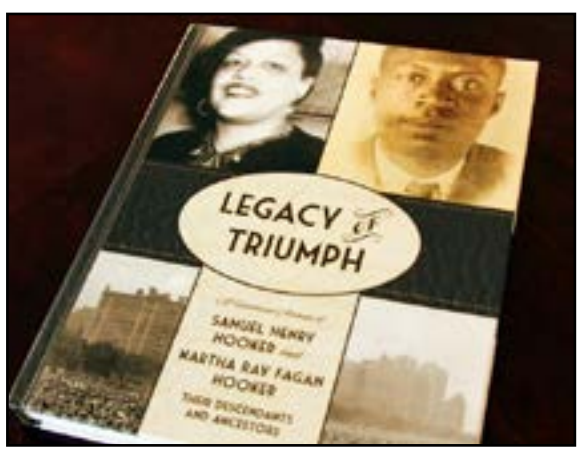
Tom and Alison Taylor







PICTURES AND STORIES

BOOK DESIGN
WRITING & EDITING
STORY COACHING
PHOTO PREPARATION
VIDEO INTERVIEWS

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