

# Photography for Model Railroaders

Ted Culotta  
Prototype Rails  
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This file will be posted to [prototopics.blogspot.com](http://prototopics.blogspot.com)

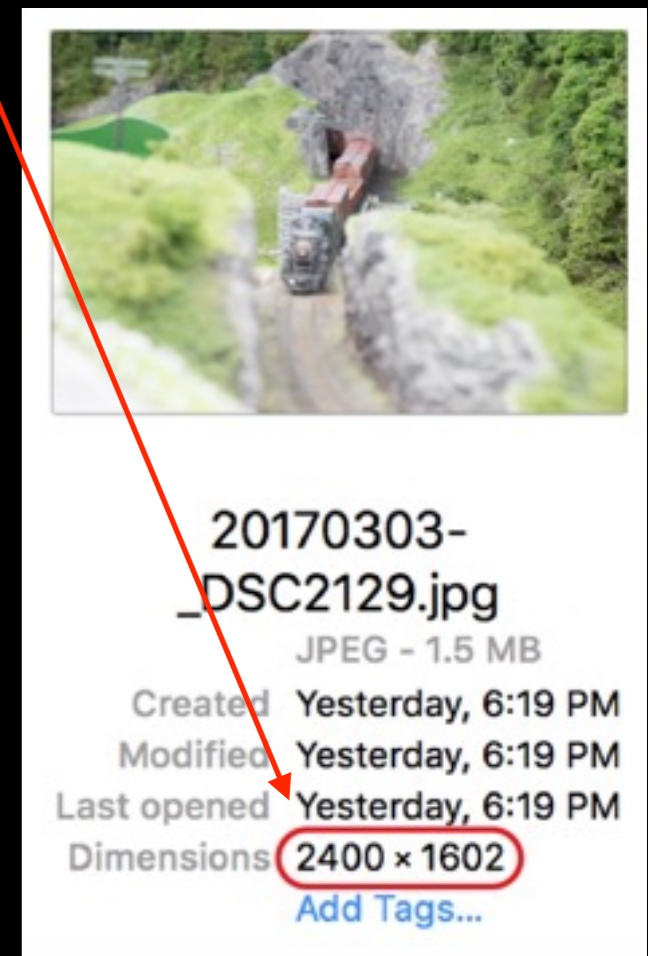
# What equipment to use?

## What do I use?

- The best camera is the one in your hand. Mine:
  - iPhone
  - Sony a7r DSLR (mirrorless - electronic viewfinder)
- Macro lens or zoom with macro capabilities
- Tripod - if you plan to use photo stacking do not skimp; you'll end up buying two tripods if you do
- Head - ball head with Arca-style quick release is highly recommended
- Cable release
- Software
  - Adobe Lightroom Classic
  - Adobe Photoshop (not a necessity, but really nice for certain features)
  - Helicon Focus for "stacking" images
- Lights - type not as important, but I use "cool" bulbs
- Know how to use your gear: Luck is when opportunity meets preparation

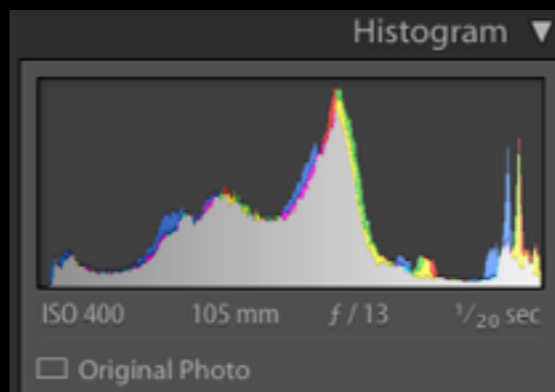
# Working with images

- Image size
  - Unlearn notions of inches, unless you're going to get into book design, layout, and printing
  - Think in pixels
  - Most of the images I post to my blog are 2000 pixels wide for horizontal aspect images (in File Finder or Explorer you can see this using command-i)
- Color space
  - For images to be shared online or for digital presentations, use RGB or preferably sRGB
  - For print use CMYK



# Taking photos

- I prefer indoor lighting with full, even coverage, using “cool” bulbs
- If outdoors, I try to use shade rather than direct sunlight. Sunlight creates harsh shadows and can render shadow detail fully black while washing out highlighted areas. It also desaturates color, taking away richness and saturation.
- If you do wish to use direct sunlight, it is advisable to make several exposures that expose for both the shadows and highlights and then using an HDR (high dynamic range) software tool to blend them.
- Exposure: If you have a DSLR, you can control exposure. I use the exposure compensation tool (usually a dial with the +1, +2, etc., in 1/3 increments) and overexpose by 1 to 2 stops. Use your histogram!



# Using your smartphone to photograph models

- Smartphones can produce almost publish or print-ready images. They are excellent for “flat” subjects = minimal to zero depth of field, e.g. a broadside photo of a box car shot “straight on”. The more oblique the angle of the model, the more they suffer.
- Because smartphones are equipped with generally wide angle lenses, depth of field is adequate to strong.
- Depth of field can be manipulated slightly by selecting the focus point (tap screen for focus point - yellow box at right). In general, focusing on a point 1/3 into your desired depth of field will produce acceptable results.
- Images can become “noisy” easily. The sensor in the phone is small and can render shadow detail poorly. Know this in advance!



# Why Lightroom?

Lightroom offers several key functions to serve the needs of those managing large numbers of images.

- A logical file management structure to quickly import and catalog files for ease of use in future
- The ability to easily find images based upon keyword searches or other criteria such as rating and flagging
- Robust, “non-destructive” develop tools that are more than adequate for most users, even professionals, including soft-proofing to emulate prints
- Industry-leading print driver that manages both printer and paper to produce optimal prints

# Why Photoshop?

Photoshop was developed (over 25 years ago) for and evolved to serve the needs of graphic and/or print artists seeking a tool to allow manipulation of photos. It has industry-leading tools to achieve this aim. It was *not* created to serve the needs of photographers or other professionals seeking a tool to manage large quantities of photos. Photoshop does not incorporate file management so users must fall back on standard folder/file name “management”

Excellent for sophisticated clean-up work, e.g. cloning, healing, brushing, as well as using layers and masks

# What is Focus Stacking?

While it is relatively easy to maintain focus across the entire foreground through background of a panoramic landscape, it is extremely difficult when photographing subjects at close distances. Depth of field decreases in direct relation to how close the lens (and focal plane) is to the subject.

Software as well as the maturation of digital photography (although stacking can be successfully performed by digitizing traditional photos created using the same techniques) has allowed multiple images that focus on different planes or layers across the entire subject to be stitched together to create depth of field across an entire subject. It's easier to understand through photos....















































The image after rendering through Helicon Focus

At right is the final image after rendering through Helicon Focus then “developing” in Lightroom.

One note is that rendering a large number of full-frame DSLR images (21 in this instance) can require computer processing horsepower

This is the cover image from *Prototype Railroad Modeling, Volume Four*, from Jim Dufour’s exquisitely detailed Boston & Maine Cheshire Branch layout.



# How to capture the images for Focus Stacking

- Tripod and electronic shutter release (“cable release”)
- Use magnification for focusing and “live view” (not looking through the viewfinder, but using the display). My Sony a7r magnifies up to 14X so I can focus on a pinpointed area.
- Start in front of the first area you want to be in focus then work point to point “through” the subject or scene, recording images until you are past the farthest area that needs to be in focus.
- Use aperture priority or fully manual mode, *including manual focus*. I shoot at f13, which will provide sufficient overlap of in focus areas across images
- Record all images in one session. If there is some screwup (you bang the tripod, accidentally zoom instead of focus, etc.), you must start recording the images again. Helicon looks for continuity in rendering

# Capturing several images to use for rendering final image

Focus point for photo 8

Focus point for photo 7

Focus point for photo 6

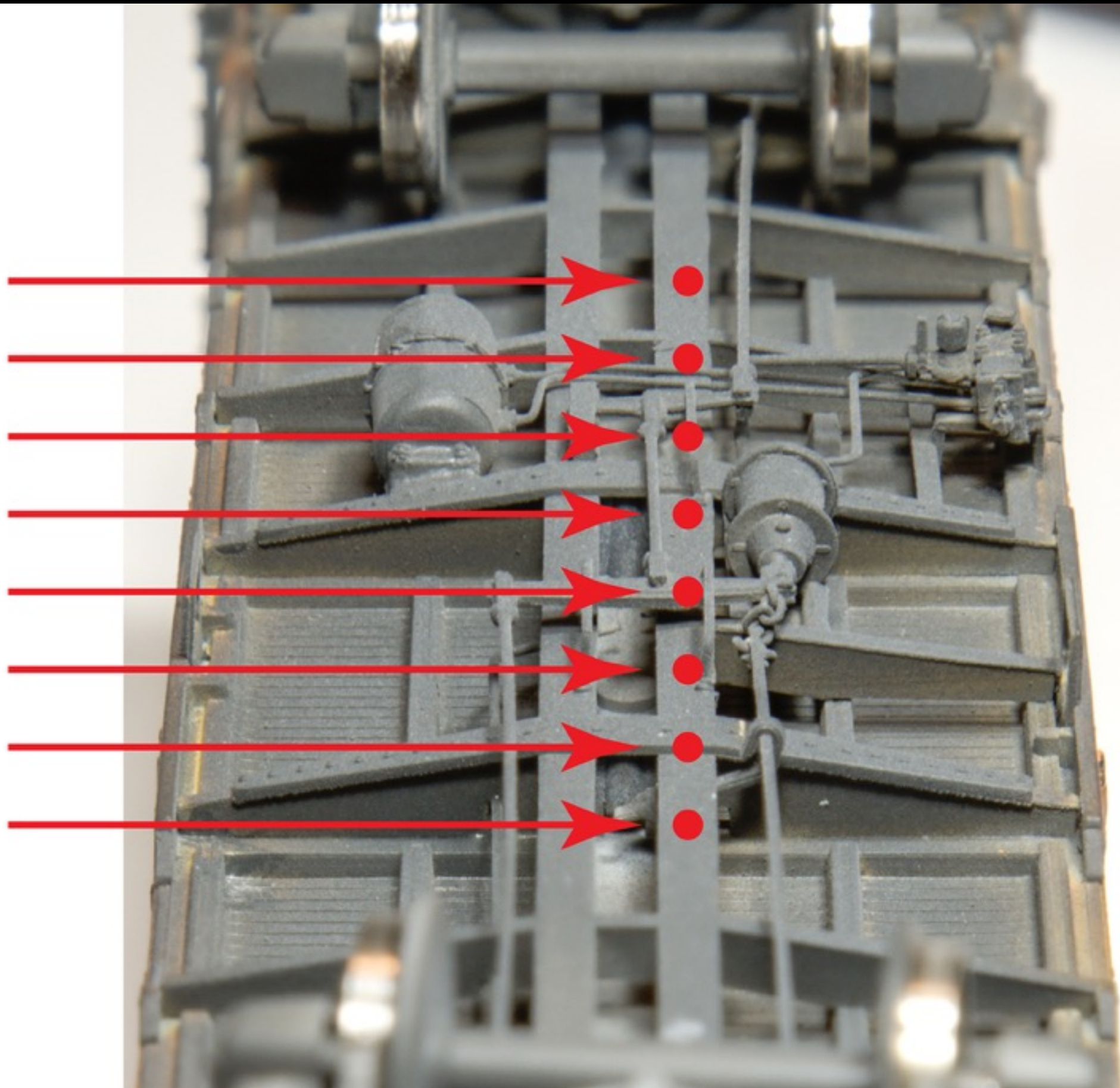
Focus point for photo 5

Focus point for photo 4

Focus point for photo 3

Focus point for photo 2

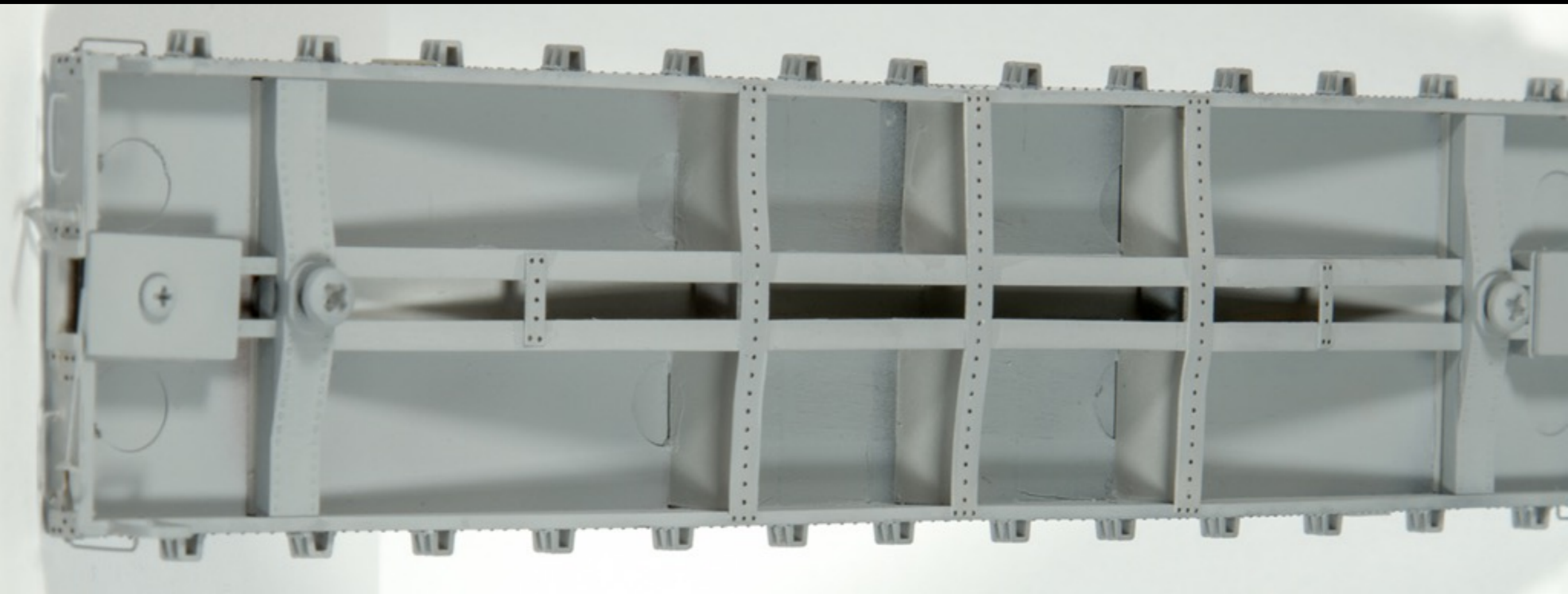
Focus point for photo 1



# Examples of images rendered using focus stacking









It's not just for  
models...





# More Lightroom

The following pages have been pulled from a Lightroom-only discussion. While we do not have time to cover them here, they have been included for reference. Should you have specific questions, please write to me at [speedwitchmedia@gmail.com](mailto:speedwitchmedia@gmail.com)

# Library View

Lightroom offers several key functions to serve the needs of those managing large numbers of images.

- Import (direct from camera or browse)
- Keywords
- Rating or flagging
- File Management
- Light box or image views
- Search (light box view)
- Rotate

# Library - "Lightbox" View

The screenshot displays the Adobe Lightroom Library Grid view. The interface includes a top menu bar with options like File, Edit, Library, Photo, Metadata, View, Window, and Help. The main workspace is a grid of 28 thumbnail images of various train cars, arranged in four rows and seven columns. The top-left corner shows the Adobe Lightroom logo and version information (CC 2015). The top-right corner displays the current time (Thu 10:01 PM) and the user's name (Ted Culotta). The right-hand side features a Histogram panel and a Keywording panel with a list of keyword tags such as 'Tank car', 'AC&F', and 'box car'. The bottom of the screen shows a dock with various application icons, including Photoshop (Ps), Lightroom (Lr), and Illustrator (Ai).

Lightroom CC 2015  
Get started with Lightroom mobile

Library | Develop | Map | Book | Slideshow | Print | Web

Navigator FIT FILL 1:1 2:1  
Library Filter: Text Attribute Metadata None Filters Off

Catalog  
All Photographs 13010  
Quick Collection + 1  
Previous Import 2  
Folders +  
Macintosh HD 13.7 / 233 GB  
1903 17  
1903-12-31 17  
2002 0  
2003 0  
2004 0  
2005 6

Import... Export...  
Sort: Capture Time  
★★★★★  
Thumbnails

1 2 All Photographs 13010 photos / 1 selected / 20160225-24798675050\_83c4461942\_o.jpg Filter: Filters Off

Keyword Tags Enter Keywords  
AC&F photo, John W. Barriger III National Railroad Library  
Click here to add keywords  
Keyword Suggestions  
Tank car AC&F box car  
Automobile car single sheathed Emergency  
WAB Joe Collias c... Missouri Pacific  
Keyword Set Custom  
Single sheathed Box car ARA  
L&N Louisville &... Funaro & Ca...

Sync Metadata Sync Settings

# Library - "Image" View

The screenshot displays the Adobe Lightroom Library grid view. The main image is a black and white photograph of a Conley Tank Car, a cylindrical rail car used for transporting liquids. The car is marked with "C.Y.C.X.9188" and "CLEAN". A caption at the bottom of the image reads: "Conley Tank Car Co. Jan. 6, 1927. A. C. and P. Co. Lot 369-A. Neg. 170925-A-1." The interface includes a top menu bar with "Lightroom", "File", "Edit", "Library", "Photo", "Metadata", "View", "Window", and "Help". The top right shows the system clock at "Thu 10:02 PM" and the user name "Ted Culotta". The left sidebar contains the "Navigator" panel with a thumbnail of the current image, the "Catalog" panel showing "All Photographs" (13010), and a "Folders" panel listing a hierarchy from "Macintosh HD" to "1903-12-31". The right sidebar features a "Histogram", "Keywording" panel with "Keyword Tags" and "Keyword Suggestions", and "Sync" buttons. The bottom of the screen shows a grid of 14 photo thumbnails, with the first one selected. The macOS dock at the very bottom contains various application icons including Safari, Mail, Photos, and Adobe Creative Cloud apps like Photoshop, Lightroom, and Illustrator.



# Library - Search

railroad photos-2.lrcat - Adobe Photoshop Lightroom - Library

Adobe Lightroom CC 2015  
Get started with Lightroom mobile ▶

Library | Develop | Map | Book | Slideshow | Print | Web

▼ Navigator FIT FILL 1:1 2:1  
Library Filter: Text Attribute Metadata None No Filter

Text Any Searchable Field Contains All

▼ Catalog  
All Photographs 13010  
Quick Collection + 1  
Previous Import 2

▼ Folders +  
Macintosh HD 13.6 / 233 GB  
1903 17  
1903-12-31 17  
2002 0  
2003 0  
2004 0  
2005 6

Import... Export...

Sort: Capture Time

Thumbnails

1 2 All Photographs 13010 photos / 1 selected / 20160225-24798675050\_83c4461942\_o.jpg Filter: No Filter

▼ Histogram

Original Photo

Quick Develop

Keywording

Keyword Tags Enter Keywords

AC&F photo, John W. Barriger III National Railroad Library

Click here to add keywords

Keyword Suggestions

Tank car AC&F box car  
Automobile car single sheathed Emergency  
WAB Joe Collias c... Missouri Pacific

Keyword Set Custom

Single sheathed Box car ARA  
L&N Louisville &... Funaro & Ca...

Sync Metadata Sync Settings

# Library - Keywords

The screenshot displays the Adobe Lightroom Library grid. The interface includes a top menu bar with 'Lightroom', 'File', 'Edit', 'Library', 'Photo', 'Metadata', 'View', 'Window', and 'Help'. The main grid shows a collection of railroad photographs. A yellow arrow points to the 'Keywords' tab in the top right, and another yellow arrow points to the 'Keyword entry field' at the bottom of the grid. The right-hand panel features a 'Histogram' and a 'Keywording' section. The 'Keywording' section includes a 'Keyword Tags' dropdown menu with the text 'Enter Keywords', a list of existing keywords such as 'AC&F photo, John W. Barriger III National Railroad Library', and a 'Keyword Suggestions' section with terms like 'Tank car', 'AC&F', 'box car', 'Automobile car single sheathed', 'Emergency', 'WAB', 'Joe Collias c...', and 'Missouri Pacific'. The bottom status bar shows 'All Photographs', '13010 photos / 1 selected', and the filename '20160225-24798675050\_83c4461942\_o.jpg'.

Lightroom CC 2015  
Get started with Lightroom mobile

Keywords Library | Develop | Map | Book | Slideshow | Print | Web

Library Filter: Text Attribute Metadata None Filters Off

Navigator FIT FILL 1:1 2:1

Catalog  
All Photographs 13010  
Quick Collection + 1  
Previous Import 2

Folders  
Macintosh HD 13.7 / 233 GB  
1903 17  
1903-12-31 17  
2002 0  
2003 0  
2004 0  
2005 6

Import... Export...

Sort: Capture Time

Keyword entry field

Thumbnail

Histogram

Original Photo

Defaults Quick Develop

Keywording

Keyword Tags Enter Keywords

AC&F photo, John W. Barriger III National Railroad Library

Keyword Suggestions

Tank car AC&F box car  
Automobile car single sheathed Emergency  
WAB Joe Collias c... Missouri Pacific

Keyword Set Custom

Single sheathed Box car ARA  
L&N Louisville &... Funaro & Ca...

Sync Metadata Sync Settings

All Photographs 13010 photos / 1 selected / 20160225-24798675050\_83c4461942\_o.jpg

Filter: Filters Off

# Library - Keyword Search

The screenshot displays the Adobe Photoshop Lightroom Library grid interface. The search bar at the top right of the grid contains the text "Q~ santa fe emergency box car". The grid shows a collection of 24 photographs, all of which are images of box cars. The interface includes a Navigator panel on the left showing a larger view of the selected image, a Catalog panel with a folder tree, and a right-hand panel with a Histogram and Keywording section. The Keywording section shows a list of keyword tags, including "151191, ATSF, box car, Builder's photo, Bx-39, Emergency, Haskell & Barker, May 23 1944, Pullman-Standard, Santa Fe, Smithsonian". The bottom status bar indicates "All Photographs 24 of 13010 photos / 1 selected / 20141218-img258.tif".

Adobe Lightroom CC 2015  
Get started with Lightroom mobile ▶

Library | Develop | Map | Book | Slideshow | Print | Web

Library Filter: Text | Attribute | Metadata | None | Custom...

Text | Any Searchable Field | Contains All | Q~ santa fe emergency box car

Navigator  
FIT FILL 1:1 2:1

Catalog  
All Photographs 13010  
Quick Collection + 1  
Previous Import 2

Folders +  
Macintosh HD 13.6 / 233 GB  
1903 17  
1903-12-31 17  
2002 0  
2003 0  
2004 0  
2005 6

Import... Export...

Sort: Capture Time

Histogram

Original Photo

Defaults Quick Develop

Keywording

Keyword Tags Enter Keywords

151191, ATSF, box car, Builder's photo, Bx-39, Emergency, Haskell & Barker, May 23 1944, Pullman-Standard, Santa Fe, Smithsonian

Click here to add keywords

Keyword Suggestions

Great Northern	GN	construction
Plywood	Chicago	Hopper
Gondola	Bob's Photo	1932 ARA

Keyword Set Custom

Single sheathed	Box car	ARA
L&N	Louisville &...	Funaro & Ca...

Sync Metadata Sync Settings

All Photographs 24 of 13010 photos / 1 selected / 20141218-img258.tif

Filter: Custom Filter

# Library - Folders

The screenshot displays the Adobe Lightroom Library grid. The top menu bar includes 'Lightroom', 'File', 'Edit', 'Library', 'Photo', 'Metadata', 'View', 'Window', and 'Help'. The window title is 'railroad photos-2.lrcat - Adobe Photoshop Lightroom - Library'. The interface shows the 'Library' tab selected, with navigation options for 'Develop', 'Map', 'Book', 'Slideshow', 'Print', and 'Web'.

**Navigator:** Shows a large preview of a selected photo (a white freight car) and a list of folders on the left. The folder '2015-04-10' is highlighted with a yellow circle, indicating it contains 16 photos.

Folder Name	Photo Count
2015-04-07	1
2015-04-08	98
<b>2015-04-10</b>	<b>16</b>
2015-04-12	10
2015-04-19	30
2015-04-20	46
2015-04-21	80
2015-04-22	38
2015-04-23	135
2015-04-24	80
2015-04-25	18
2015-04-26	89
2015-04-27	42

**Library Filter:** A grid of 16 small photo thumbnails is displayed, with the first two in the bottom row selected.

**Right Panel:** Includes a 'Histogram' showing a bell-shaped curve, 'Keywording' options, and 'Keyword Suggestions' such as 'box car', 'Truss rod', and 'ca. 1940'.

**Bottom Bar:** Shows 'Import...', 'Export...', 'Sort: Capture Time', and a 'Thumbnails' slider. The status bar at the bottom indicates 'Folder: 2015-04-10 16 photos / 1 selected / 20150410-img551.tif'.

# Library - Folders

VERY IMPORTANT!

*All* file moves and management should occur *within* LR or if done outside LR, you should *immediately* go into LR to “point” LR to the new file location(s). One of the strengths of LR is its ability to provide file management; moving files “outside” of LR can lead to lost links to files, rendering the file management capabilities useless.

# Develop View

Lightroom uses *non-destructive* developing tools. Non-destructive means that the underlying file is not modified; only the view of the file is modified, akin to filters. This is a major difference from Photoshop and makes multiple developments, changes, etc., easy. It is difficult to stress how important it is that the underlying file is not adjusted during the process!

Additionally, the developing tools are essentially filters over the underlying file. A file can be “developed” multiple ways by using the “Create Virtual Copy” tool. There is still only a single underlying file, saving significant disk storage space.

# Develop View

The screenshot displays the Adobe Lightroom Develop View interface. The central workspace shows a historical black and white photograph of a Conley Tank Car Co. tank car, numbered C.Y.C.X.9188, on a flatcar. The car has a cylindrical tank with a smaller tank on top labeled "CLEAN". The flatcar is labeled "C.Y.C.A.3100". A caption at the bottom of the photo reads: "Conley Tank Car Co. Jan. 6, 1927. A. C. and P. Co. Lot 369-A. Neg. 170925-A-1." The interface includes several panels: "Navigator" on the left showing a thumbnail of the photo; "Presets" below it with a list of preset categories; "History" at the bottom left showing the "Import" action. The top navigation bar includes "Library | Develop | Map | Book | Slideshow | Print | Web". The right-hand panel contains a "Histogram" at the top, followed by a "Tools" section with icons for crop, crop straighten, crop mask, crop mask brush, and crop mask brush, and a "Basic" adjustment panel with sliders for White Balance (WB: As Shot), Temperature, Tint, Exposure, Contrast, Highlights, Shadows, Whites, and Blacks. The bottom toolbar includes "Copy...", "Paste", "Soft Proofing" (circled in red), and a grid of photo thumbnails at the bottom.

Adobe Lightroom CC 2015  
Get started with Lightroom mobile ▶

Library | Develop | Map | Book | Slideshow | Print | Web

▼ Navigator FT FILL 1:1 2:1

▼ Presets +

- ▶ Lightroom B&W Filter Presets
- ▶ Lightroom B&W Presets
- ▶ Lightroom B&W Toned Presets
- ▶ Lightroom Color Presets
- ▶ Lightroom Effect Presets
- ▶ Lightroom General Presets
- ▶ Lightroom Video Presets
- ▶ User Presets

▼ Snapshots +

▼ History ×

Import (2/24/16 9:19:07 PM)

Copy... Paste

Soft Proofing

▼ Histogram

Original Photo

Tools

Basic ▼

Treatment: Color Black & White

WB: As Shot

Temp 0

Tint 0

Tone Auto

Exposure 0.00

Contrast 0

Highlights 0

Shadows 0

Whites 0

Blacks 0

Previous Reset

1 2 All Photographs 13010 photos / 1 selected / 20160225-24798675050\_83c4461942\_o.jpg Filter: Filters Off

# Develop Tools

The screenshot displays the Adobe Photoshop Lightroom Develop module interface. The central workspace shows a photograph of a white tank car on a flatbed railcar. The tank car has the number "C.Y.C.X. 9188" and the word "CLEAN" on its side. A black label at the bottom of the photo reads: "Conley Tank Car Co. Jan. 6, 1927. A. C. and F. Co. Lot 369-A. Neg. 170925-1-1." The interface includes a Navigator panel on the left, a Presets panel, and a History panel. The right-hand side features a Histogram and a Basic panel with sliders for Treatment (Color/Black & White), WB (As Shot), Temp, Tint, Exposure, Contrast, Highlights, Shadows, Whites, and Blacks. The bottom of the interface shows a grid of thumbnails for other photos in the library.

Yellow arrows point to various tools and panels:

- Spot Removal**: Points to the Spot Removal tool icon in the top right corner of the Develop module.
- Red-eye Correction**: Points to the Red-eye Correction tool icon in the top right corner of the Develop module.
- Crop Tool**: Points to the Crop tool icon in the top right corner of the Develop module.
- Graduated Filter**: Points to the Graduated Filter tool icon in the bottom right corner of the Develop module.
- Radial Filter**: Points to the Radial Filter tool icon in the bottom right corner of the Develop module.
- Adjustment Brush**: Points to the Adjustment Brush tool icon in the bottom right corner of the Develop module.

Other visible text in the interface includes: "railroad photos-2.lrcat - Adobe Photoshop Lightroom - Develop", "Library | Develop | Map | Book | Slideshow | Print | Web", "Adobe Lightroom CC 2015", "Get started with Lightroom mobile", "Navigator", "Presets", "Snapshots", "History", "Import (2/24/16 9:19:07 PM)", "Copy...", "Paste", "Soft Proofing", "Filter: Filters Off", and "Previous Reset".



# Develop Tools

railroad photos-2.lrcat - Adobe Photoshop Lightroom - Develop

Library | Develop | Map | Book | Slideshow | Print | Web

Adobe Lightroom CC 2015  
Get started with Lightroom mobile ▶

▼ Navigator FIT FULL 1:1 2:1

▼ Presets +

- ▶ Lightroom B&W Filter Presets
- ▶ Lightroom B&W Presets
- ▶ Lightroom B&W Toned Presets
- ▶ Lightroom Color Presets
- ▶ Lightroom Effect Presets
- ▶ Lightroom General Presets
- ▶ Lightroom Video Presets
- ▶ User Presets

▼ Snapshots +

▼ History ×

Import (2/24/16 9:19:07 PM)

Copy... Paste

Soft Proofing

▼ Histogram ▼

Original Photo

Basic ▼

Treatment: Color Black & White

WB: As Shot

Temp: 0

Tint: 0

Tone Auto

Exposure: 0.00

Contrast: 0

Highlights: 0

Shadows: 0

Whites: 0

Blacks: 0

Presence



Levels, color, hue, tint, saturation, sharpening, distortion, etc.

1 2 All Photographs 13010 photos / 1 selected / 20160225-24798675050\_83c4461942\_o.jpg Filter: Filters Off

# Develop Tool Functions

- Crop tool - remove unwanted portions of an image and make adjustments like rotation
- Spot removal - to clean up unwanted blemishes such as dust, dead pixels, scratches, etc. (this is an area where Photoshop has clearly superior tools where complex adjustments are necessary using the Clone and Healing tools).
- Red eye correction
- Graduated filter, e.g. graduated neutral density (ND) filter
- Radial filter
- Adjustment brush - allows for complex selection and dodging and burning
- Level, hue, saturation, luminance, sharpening, lens adjustments tools

# Develop Tool Functions

Two other important tools (from this user's perspective!) are:

- Soft-Proofing, which is the ability to develop an image for a specific printer and paper combination, almost entirely eliminating the “develop and pray” scenario when one hits the print button
- Virtual copy - you can create as many “views” of an image as you like, allowing you to develop the same image for different purposes without creating multiple “real” and different files.

# Develop Tools

Virtual Copy - right click on image and click from pop-up menu

The screenshot displays the Adobe Lightroom CC 2015 interface. The main window shows a photograph of a white refrigerated train car with the text "FRUIT GROWERS EXPRESS" and "REFRIGERATOR" visible. A context menu is open over the photo, with "Create Virtual Copy" highlighted in blue. The menu includes options such as "Lock to Second Window", "Show in Finder", "Edit In", "Photo Merge", "Set Flag", "Set Rating", "Set Color Label", "Add Shortcut Keyword", "Add to Quick Collection and Next", "Stacking", "Develop Settings", "Metadata Presets", "Rotate Left (CCW)", "Rotate Right (CW)", "Metadata", "Export", "Email Photo...", "Remove Photo...", and "View Options".

The interface also shows the "Navigator" panel on the left, the "Histogram" panel on the right, and the "Basic" panel with sliders for "Temp", "Tint", "Exposure", "Contrast", "Highlights", "Shadows", "Whites", and "Blacks". The top menu bar includes "Lightroom", "File", "Edit", "Develop", "Photo", "Settings", "Tools", "View", "Window", and "Help". The bottom dock contains various application icons, including Adobe Creative Cloud apps like Ai, Ps, Lr, and Id.

# Develop Tools

## Soft Proofing - click the box

The screenshot displays the Adobe Photoshop Lightroom - Develop module. The central workspace shows a historical black and white photograph of a Conley Tank Car Co. tank car, numbered C.Y.C.X. 9188, on a flatcar. The car has a cylindrical tank with a smaller dome on top labeled "CLEAN". A white box at the bottom of the photo contains the text: "Conley Tank Car Co. Jan. 6, 1927. A. C. and F. Co. Lot 369-A. Neg. 170925-A-1." The interface includes a Navigator panel on the left with a thumbnail of the photo, a Presets panel with various filter and effect options, and a History panel showing the "Import" action. The right-hand panel features a Histogram, a Basic panel with sliders for White Balance (WB: As Shot), Temperature, Tint, Exposure, Contrast, Highlights, Shadows, Whites, and Blacks, and a Presence panel. At the bottom, the "Soft Proofing" checkbox is highlighted with a yellow box and a yellow line pointing to the text "Soft Proofing" in the bottom right corner. The bottom bar shows the library grid with 13010 photos, 1 selected, and the current photo's filename: 20160225-24798675050\_83c4461942\_o.jpg.

Before



After



# File Export

Lightroom allows the user to select one or many images to export with multiple settings, including file naming, location, settings, sizing, sharpening, watermarking, etc.

An exported image is an *entirely new* file, *outside* of Lightroom, that *contains all of the changes* made in Lightroom.

# File Export

The screenshot shows the Adobe Lightroom interface with the 'Export One File' dialog box open. The dialog is titled 'Export One File' and is set to export to a 'Hard Drive'. The 'Export Location' section is expanded, showing 'Export To: Specific folder' and 'Folder: /Users/Ted/Library/Mobile Documents/iCloud Drive/trains/fofc/5 steel'. The 'File Naming' section is also expanded, showing 'Rename To: Custom Name' and 'Example: 20150410-img551.tif'. The 'Video' section is expanded, showing 'Include Video Files' checked. The 'File Settings' section is expanded, showing 'Image Format: TIFF', 'Compression: None', 'Color Space: ProPhoto RGB', and 'Bit Depth: 16 bits/component'. The 'Image Sizing' section is also expanded. The background shows the Lightroom interface with a photo of a train car, a histogram, and various adjustment sliders.

Lightroom File Edit Window Help

railroad photos-2.lrcat - Adobe Photoshop Lightroom - Develop

Export One File

Export To: Hard Drive

Preset: Export One File

**Export Location**

Export To: Specific folder

Folder: /Users/Ted/Library/Mobile Documents/iCloud Drive/trains/fofc/5 steel Choose...

Put in Subfolder:

Add to This Catalog  Add to Stack: Below Original

Existing Files: Ask what to do

**File Naming**

Rename To: Custom Name

Custom Text: Start Number:

Example: 20150410-img551.tif Extensions: Lowercase

**Video**

Include Video Files:

Video Format: Quality:

**File Settings**

Image Format: TIFF Compression: None

Color Space: ProPhoto RGB Bit Depth: 16 bits/component

Save Transparency

**Image Sizing**

Plug-in Manager... Cancel Export

Adobe Lightroom CC 2015 Theodore Culotta

Navigator FIT FILL 1:1 1:2

Presets

- Lightroom B&W Filter Presets
- Lightroom B&W Presets
- Lightroom B&W Toned Presets
- Lightroom Color Presets
- Lightroom Effect Presets
- Lightroom General Presets
- Lightroom Video Presets
- User Presets

Snapshots

History

Export - Hard Drive (4/10/15 11:10:03 AM)

Copy... Paste

1 2 Folder: 2015-04-10

Slideshow | Print | Web

Histogram

Original Photo

Basic

Treatment: Color | Black & White

WB: As Shot

Temp Tint

Tone Auto

Exposure 0.00

Contrast 0

Highlights 0

Shadows 0

Whites 0

Blacks 0

Presence

Previous Reset

Filter: Filters Off



# File Export

Lightroom File Edit Window Help

railroad photos-2.lrcat - Adobe Photoshop Lightroom - Develop

Export One File

Export To: **Hard Drive**

Preset: Export One File

VIDEO FORMAT:

Quality:

**File Settings**

Image Format: **TIFF** Compression: **None**

Color Space: **ProPhoto RGB** Bit Depth: **16 bits/component**

Save Transparency

**Image Sizing**

Resize to Fit: **Long Edge**  Don't Enlarge

**3,000** pixels Resolution: **72** pixels per inch

**Output Sharpening**

Sharpen For: **Screen** Amount: **High**

**Metadata**

Include: **All Metadata**

Remove Person Info  Remove Location Info

Write Keywords as Lightroom Hierarchy

**Watermarking** No watermark

**Post-Processing**

After Export: **Do nothing**

Application: Choose an application...

Plug-in Manager...

Adobe Lightroom CC 2015 Theodore Culotta

Navigator FIT FILL 1:1 1:2

Presets

- Lightroom B&W Filter Presets
- Lightroom B&W Presets
- Lightroom B&W Toned Presets
- Lightroom Color Presets
- Lightroom Effect Presets
- Lightroom General Presets
- Lightroom Video Presets
- User Presets

Snapshots

History

Export - Hard Drive (4/10/15 11:10:03 AM)

Copy... Paste

Folder: 2015-04-10

Slideshow | Print | Web

Histogram

Original Photo

Basic

Treatment: Color | Black & White

WB: As Shot

Temp Tint

Tone Auto

Exposure 0.00

Contrast 0

Highlights 0

Shadows 0

Whites 0

Blacks 0

Presence

Previous Reset

Filter: Filters Off

# Print View

Ever wonder why the prints from your home printer aren't quite what you expected? The printer and computer aren't optimizing the output based upon printer and paper used. Each printer deposits ink differently and each paper absorbs ink differently. Lightroom allows you to manage these combinations so your prints look as good as the printer is capable of producing.

This is achieved by loading ICC profiles for each printer/paper combination and then accessing them as you develop and print images.

# Not just for photos....

- What about those .pdf files you have on your hard drive?
- How do you know what you have and where to find it?
- What about all those magazines you have under the benchwork and everywhere else (how much material is there really worth saving?)



# Not just for photos...

Lightroom File Edit Library Photo Metadata View Window Help Sat 7:18 AM Ted Culotta

railroad photos-2.lrcat - Adobe Photoshop Lightroom - Library

Adobe Lightroom CC 2015 Theodore Culotta Library | Develop | Map | Book | Slideshow | Print | Web

**Navigator** FIT FILL 1:1 1:2



**Catalog**

- All Photographs 13317
- Quick Collection + 1
- Previous Import 57

**Folders**

- Macintosh HD 12.1 / 233 GB
  - 1903 17
    - 1903-12-31 17
  - 2002 0
  - 2003 0
  - 2004 0
  - 2005 6

Import... Export...



**Histogram**

Original Photo

Defaults Quick Develop

**Keywording**

Keyword Tags Enter Keywords

6326, Model Railroad Hobbyist, MRH, Multiple Compartment Tank Cars, Richard Hendrickson, SHPX, three compartment

Click here to add keywords

**Keyword Suggestions**

General Ame...	GATC	Type 30
GATX	Stauffer Che...	13504
UTLX	Union Tank L...	13004

Keyword Set Custom

Single sheat...	Box car	ARA
L&N	Louisville & ...	Funaro & Ca...

Sync Sync Settings

1 2 All Photographs 14 of 13317 photos / 1 selected / 20160123-60.MRH15-02-Feb2015-L\_Page\_071.jpg

Filter: Custom Filter

# Not just for photos...

Lightroom File Edit Library Photo Metadata View Window Help Sat 7:19 AM Ted Culotta

railroad photos-2.lrcat - Adobe Photoshop Lightroom - Library

Adobe Lightroom CC 2015 Theodore Culotta Library | Develop | Map | Book | Slideshow | Print | Web

**Navigator** FIT FILL 1:1 1:2

**Catalog**

- All Photographs 13317
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**Folders**

- Macintosh HD 12.1 / 233 GB
  - 1903 17
    - 1903-12-31 17
  - 2002 0
  - 2003 0
  - 2004 0
  - 2005 6

**Import...** **Export...**

**HO SCALE FREIGHT CAR TRUCKS**  
Richard Hendrickson  
April 1, 2014

As this list demonstrates, we've come a long way since the days when most modelers assumed there were only four types of trucks: Arch Bar, Andrews, Bettendorf, and Roller Bearing. Model trucks are listed below roughly in the chronological order of their prototypes, though there was, of course, much overlap. Where possible, I've given stock numbers. However, in some cases stock numbers have been elusive, so I've used the manufacturers' descriptions even when they are incorrect.

Many HO scale freight car trucks are still for sale, or at least are still available on the resale market, for which there are now much better alternatives, and accordingly I have not listed them. However, if I've missed any HO scale trucks you think should be included, please e-mail me at [rhendrickson@opendoor.com](mailto:rhendrickson@opendoor.com). Trucks with "working" springs are not listed unless there is no alternative. "Working" springs have always been too stiff to actually work well and the tiny "see through" wire coils are entirely unrealistic. (Some modelers have addressed this by attaching thin black plastic view blocks behind the spring boxes, which helps but does not eliminate the problem.) Kadee is converting some older truck frames to solid HGC frames with molded springs, but not all of their cast metal trucks have been reworked.

Model truck manufacturers' descriptions cannot be taken literally, as they often misidentify the prototypes for their trucks. The "Bettendorf" label is especially likely to be mis-used; in the dark ages of the hobby, it was applied generically to any truck having the journal boxes cast as part of the side frames, and is still so used by some model truck manufacturers. Though the first such trucks were of the patented Bettendorf T-Section design, later integral-journal-box trucks were built by many different manufacturers to a variety of designs, though all of them met specifications developed by the ARA (later AAR), and Bettendorf itself stopped making trucks entirely in 1942. Calling the many different types of ARA/AAR trucks "Bettendorf" is, therefore, confusing and inaccurate.

Another terminological issue is the use of "friction bearing" for trucks with solid bearings. Though roller bearing manufacturers used the term "friction bearings" negatively in advertising, it was never adopted in the railroad engineering literature. In fact, all journal bearings have some friction, though roller bearings have less resistance on starting and at low speeds. So "friction bearing" is an incorrect reference to trucks having plain or solid journal bearings. "Double truss" is also a problem, as prototype truck makers used it in the early 20<sup>th</sup> century for U-section side frames but later for boxed-in lower chords.

I'm sometimes asked why I don't include later trucks with roller bearings in this list. The answer is simple; since my modeling is focused on the steam/diesel transition era, I don't know very much about roller bearing trucks and am not motivated to learn more. I would be happy to include information on this subject if a post-1960 modeler would carry out the necessary research; any volunteers?

**Histogram**

Original Photo

Defaults Quick Develop

**Keywording**

Keyword Tags Enter Keywords

HO scale freight car trucks, Richard Hendrickson

Click here to add keywords

**Keyword Suggestions**

- The Warbon... ATSF Fourth Quart...
- Santa Fe's LJ... Model Railro... Railmodel Jo...
- Multiple Co... MRH double Shea...

**Keyword Set** Custom

- Single sheat... Box car ARA
- L&N Louisville &... Fsmaro & Ca...

Sync Sync Settings

1 2 All Photographs 70 of 13317 photos / 1 selected / 20151207-HO Scale Freight Car Trucks\_Page\_01.jpg Filter: Custom Filter

# Not just for photos...

The screenshot displays the Adobe Lightroom CC 2015 interface. The main workspace shows a technical drawing of a Pullman car, which is a type of passenger rail car. The drawing is a side view showing the car's structure, including the roof, windows, and wheels. The interface includes a top menu bar with options like File, Edit, Library, Photo, Metadata, View, Window, and Help. The left sidebar contains the Navigator, Catalog, and Folders panels. The right sidebar features the Histogram, Keywording, and Keyword Suggestions panels. The bottom of the interface shows a grid of photo thumbnails, with the current photo selected.

Lightroom CC 2015  
Theodore Culotta

Library | Develop | Map | Book | Slideshow | Print | Web

Navigator  
FIT FILL 1:1 1:2

Catalog  
All Photographs 13317  
Quick Collection + 1  
Previous Import 57

Folders  
Macintosh HD 12.0 / 233 GB  
1903 17  
1903-12-31 17  
2002 0  
2003 0  
2004 0  
2005 6

Import... Export...

Histogram

Original Photo

Defaults Quick Develop

Keywording

Keyword Tags Enter Keywords

271 500-271 999, drawing, Lot 5456, MILW, Milwaukee Road, Pullman Car & Manufacturing, Single sheathed automobile car

Click here to add keywords

Keyword Suggestions

Gondola Santa Fe Emergency  
Ga-61 IRM Illinois Railw...  
Lot 5740 Neg no 3850 Pullman-Sta...

Keyword Set Custom

Single sheat... Box car ARA  
L&N Louisville &... Funaro & Ca...

Sync Sync Settings

1 2 All Photographs 30 of 13317 photos / 1 selected / 19031231-505-F-66.tif Filter: Custom Filter

# Not just for model railroading stuff....

- How about your other photos shot with your phone or digital camera?
- Receipts?
- Recipes?
- You can create multiple catalogs



Please note that if you are viewing this file separate from the live presentation at Prototype Rails, there are some companion “ridealong” demonstrations demonstrating things that are absent from this file. Without that, some material presented herein may not be entirely clear or may seem too simplistic. Please consider attending a future RPM to see the “Full Monty”.