



**Palmetto
Division**

Upstate South Carolina



A detailed model railroad scene featuring a steam locomotive, a passenger car, and a freight car in a rural setting with a red barn and a large tree.

How To Make Better Model Railroad Photographs



**A tutorial on how to
improve your photography
of model railroad subjects.**

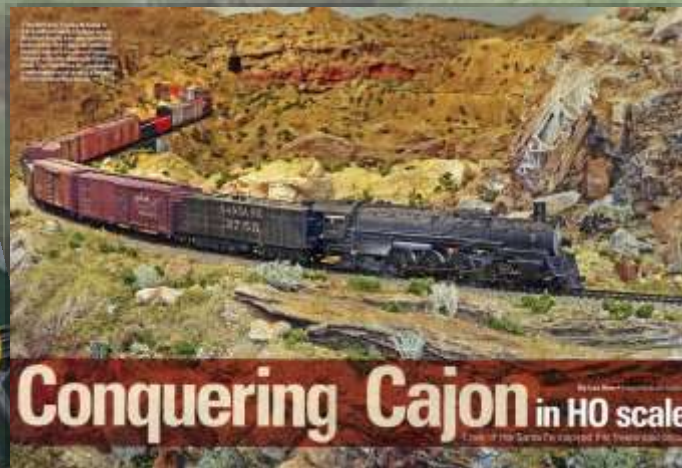
**Presented by:
Bruce G. Gathman**

Retired Professional Photographer

All the model photographs are from Chris Elliott's previous layout.

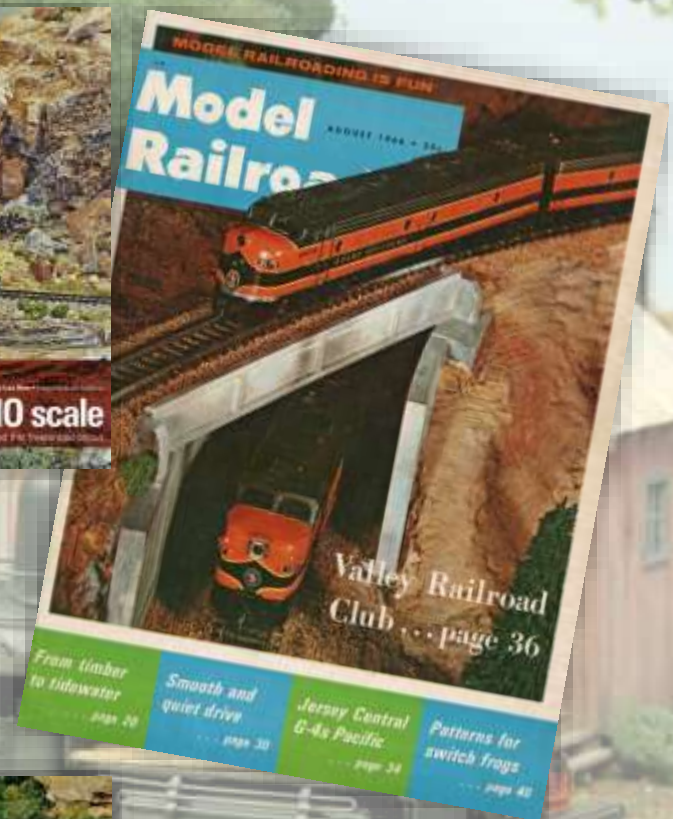


Jack Varadi's Layout.
MR 12-2019



Les Illes's Layout
MR 8-2017

Jack Varadi's Layout.
NMRA 11-2019



Valley Model RR Club
MR 08-1966





**A camera made for PHD's
isn't always the best
answer to good model
railroad photography.**

PHD = Push Here Dummy

Types of Cameras

Cell Phone

Good



Types of Cameras

Point and Shoot (PHD)

Better



Types of Cameras

Digital Single Lens Reflex (DSLR)

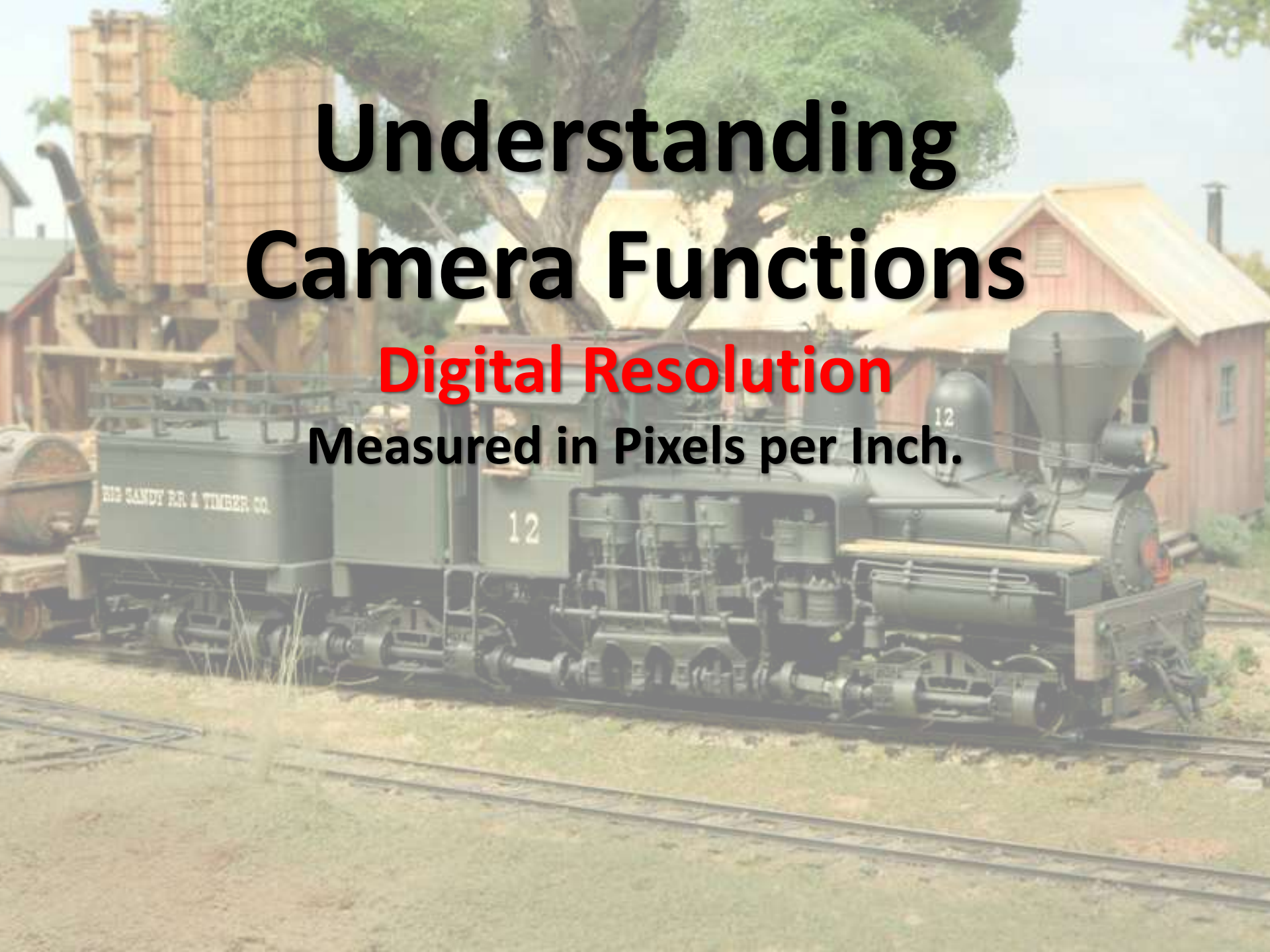
Best



Understanding Camera Functions

Digital Resolution

Measured in Pixels per Inch.



A photograph of a steam locomotive and several train cars at a railway yard. The locomotive is black with a white number '12' on its side. The train cars are green and black. In the background, there are wooden buildings and trees. The text is overlaid on the image.

Understanding Camera Functions

Digital Resolution

a. More Pixels are Better

Always set your camera to its largest number of pixels per inch.

Large/Fine or RAW.

A photograph of a steam locomotive and several train cars at a railway yard. The locomotive is black with a white number '12' on its side. The train cars are green and black. In the background, there are wooden buildings, a large tree, and a red barn with a yellow roof. The scene is set outdoors with a clear sky.

Understanding Camera Functions

Digital Resolution

a. More Pixels are better

**b. You can always reduce the
number of pixels to make
the photo smaller.**

A photograph of a steam locomotive and train cars at a railway yard. The locomotive is black with the number 12 on its side. The train cars are green and black. In the background, there are wooden buildings and trees. The text is overlaid on the image.

Understanding Camera Functions

Digital Resolution

- a. More is better
- b. You can always make it smaller
- c. You can't add pixels to make it bigger after the photo is taken.

Understanding Camera Functions

ISO

“International Organization for Standardization”

ISO measures the volume of light hitting the image sensor and standardizes it between all manufactures.

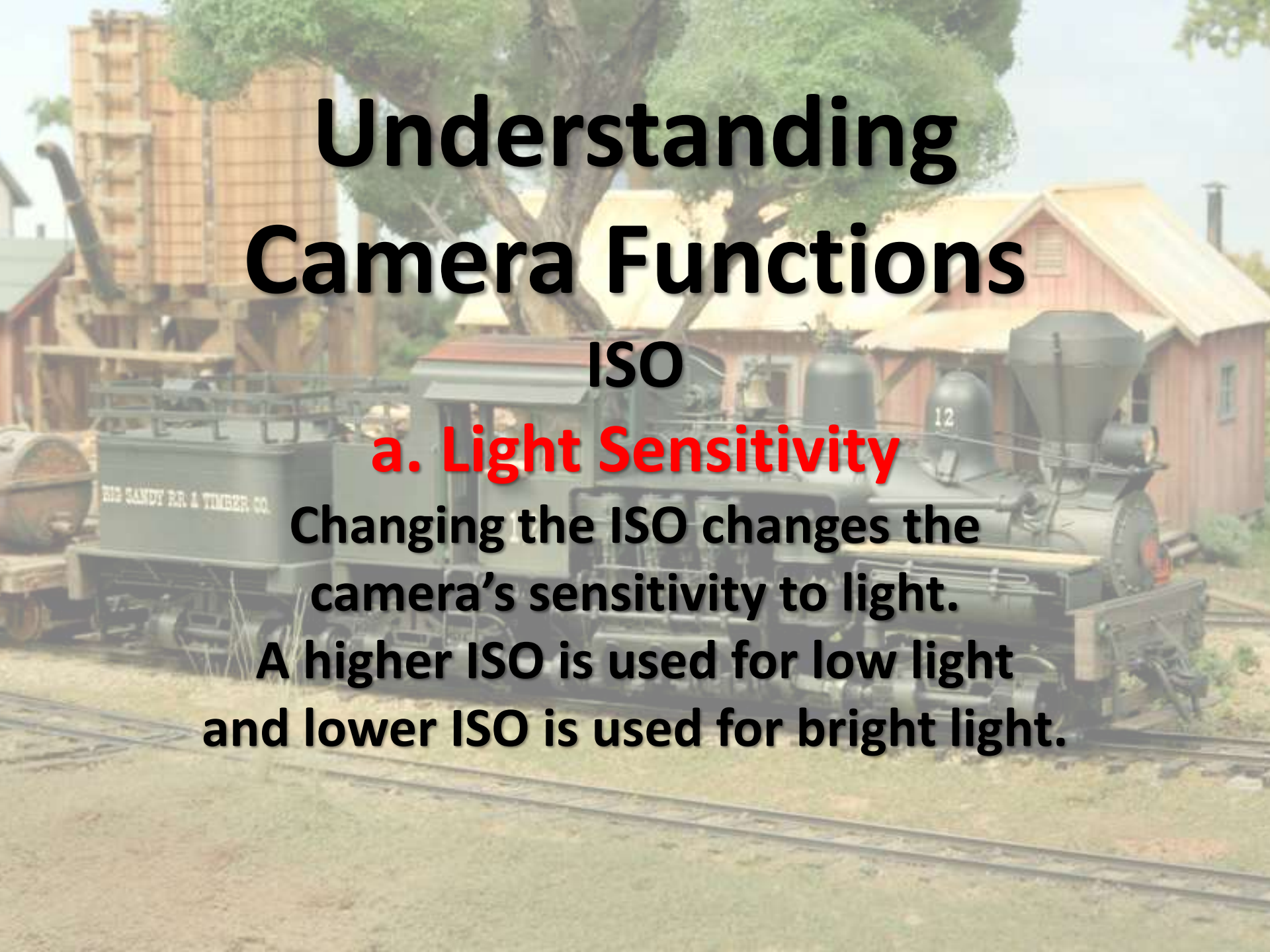
Understanding Camera Functions

ISO

a. Light Sensitivity

Changing the ISO changes the camera's sensitivity to light.

A higher ISO is used for low light and lower ISO is used for bright light.



Understanding Camera Functions

ISO

a. Light Sensitivity

b. Effect of ISO Changes on Results

Graininess appears at higher ISO's.

Photos are sharper at lower ISO's.



A photograph of a steam locomotive and several train cars at a railway yard. The locomotive is black with the number '12' on its side. The train cars are green and black. In the background, there are wooden buildings and trees. The text is overlaid on the image.

Understanding Camera Functions

Shutter Speed

a. Lets in More or Less Light

Higher speeds let in less light and slower speeds let in more light. It is shown in fractions of a second. You may need a tripod for slower shutter speeds.

A photograph of a steam locomotive and train cars at a railway station. The locomotive is black with the number 12 on its side. The train cars are green and black. The station has a red building with a yellow roof and a large tree in the background. The text is overlaid on the image.

Understanding Camera Functions

Shutter Speed

a. Letting in More or Less Light.

b. High Speed Stops Action

Affected by the angle of the subject
as it is moving in relation to the camera.

Understanding Camera Functions

Shutter Speed

a. Letting in More or Less Light

b. Stopping Action Blur

c. Reduces Camera Shake

Camera movement is emphasized as the focal length increases. A tripod will reduce the need for a high shutter speed.

A steam locomotive and several train cars are parked on tracks in front of a large wooden mill. The mill has a tall chimney and a large tree in front of it. The scene is set in a rural, historical-looking environment.

Understanding Camera Functions

Shutter Speed

a. Letting in More or Less Light

b. Stops Action Blur

c. Reduces Camera Shake

d. Shutter Priority Mode (S)

**You select the shutter speed and camera
selects the correct aperture.**

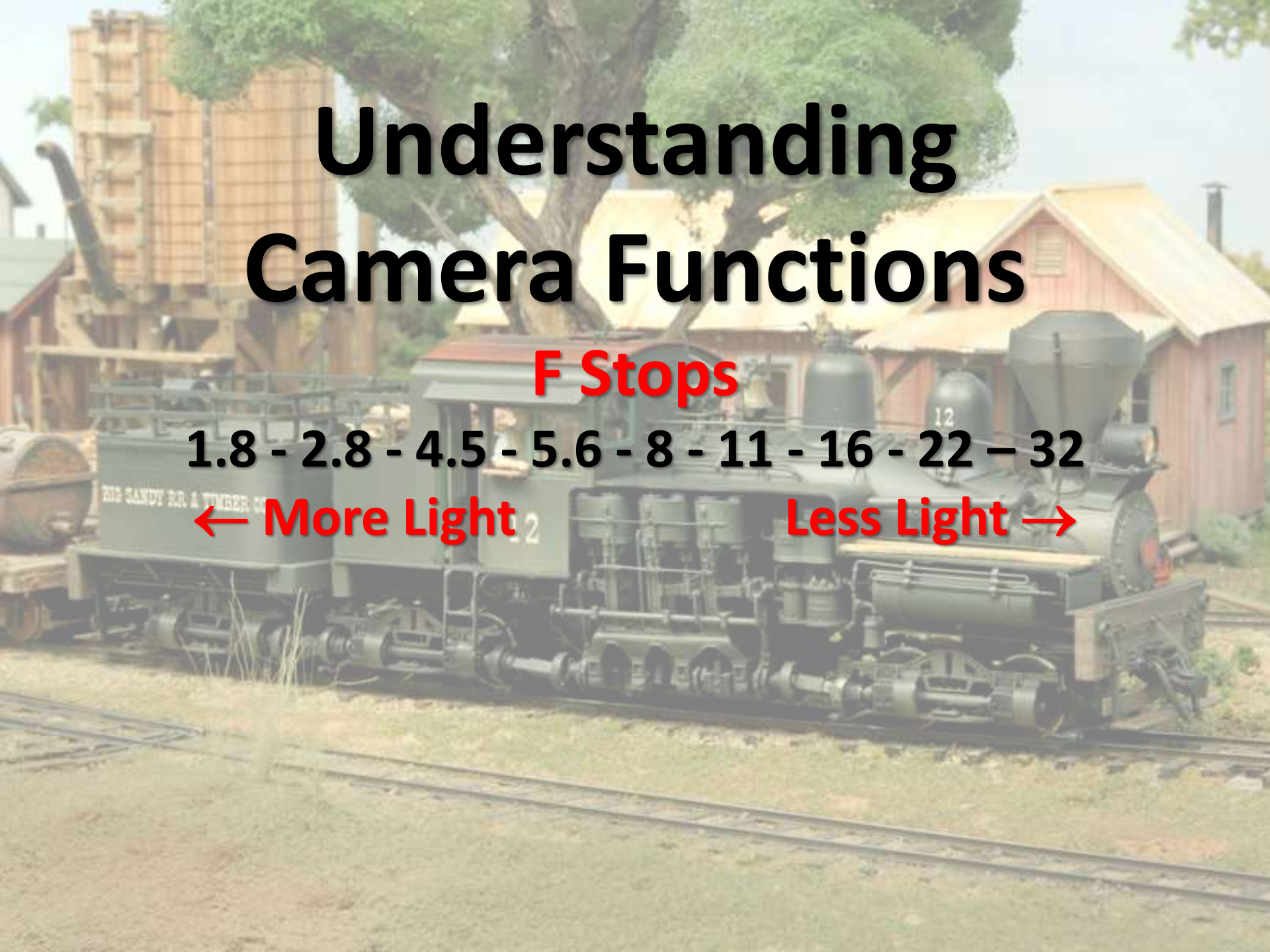
Understanding Camera Functions

F Stops

1.8 - 2.8 - 4.5 - 5.6 - 8 - 11 - 16 - 22 - 32

← More Light

Less Light →

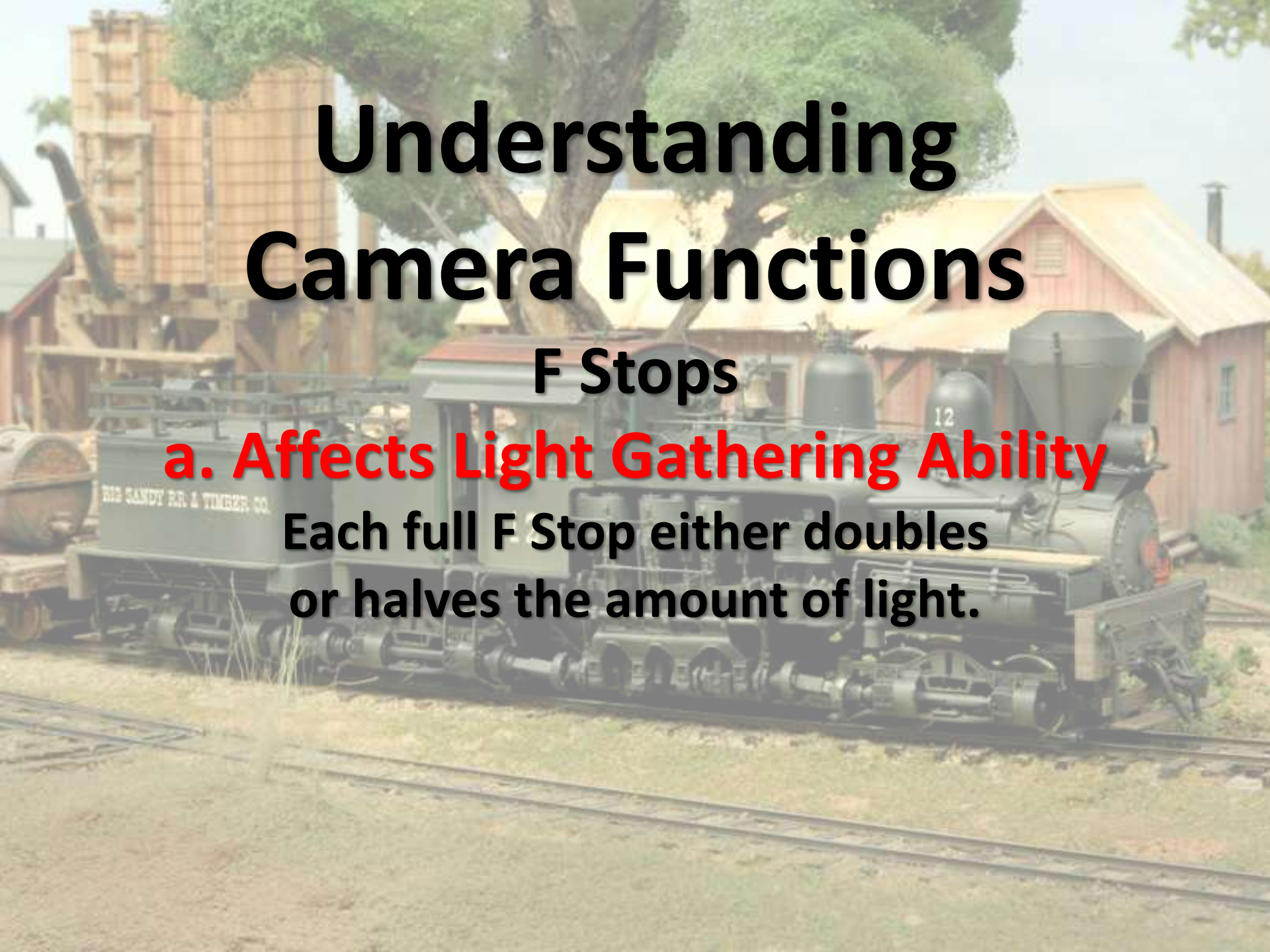


Understanding Camera Functions

F Stops

a. Affects Light Gathering Ability

Each full F Stop either doubles
or halves the amount of light.



Understanding Camera Functions

F Stops

a. Light Gathering Ability

b. Affects the Depth of Field (D of F)

Relates to the distance a photo is in focus from front to back.

Foreground | **F|P** | Background

Focal Point - Sharpest

The smaller the F stop the more D of F.

Understanding Camera Functions

F Stops

a. Light Gathering Ability

b. Depth of Field

c. Effect of Lens Focal Length

Short focal lengths have a greater D of F

Long focal lengths have a smaller D of F

A steam locomotive and several train cars are parked on tracks at a wooden station. The locomotive is black with a large smokestack and a water tank. The train cars are green and black. In the background, there are wooden buildings and trees.

Understanding Camera Functions

F Stops

a. Light Gathering Ability

b. Depth of Field

c. Effect of Focal Length

d. Aperture Priority Mode (A)

You select the Aperture and the camera selects the correct shutter speed.

Understanding Camera Functions

Automatic Focus

a. Focus Delay

Relates to the processing time it takes the camera to focus and pick what it thinks is the main subject.

PHD's are slow and DSLR's are fast.

The background image shows a steam locomotive on tracks in front of a wooden building. The locomotive is black with a white number '12' on its side. The building is made of light-colored wood with a gabled roof. There are trees and a large stack of lumber in the background.

Understanding Camera Functions

Automatic Focus

a. Focus Delay

b. Picking Where to Focus

The subject determines the focus point that should be selected.

Many newer cameras have face recognition capabilities for people pictures.

Understanding Camera Functions

Automatic Focus

a. Focus Delay

b. Picking Where to Focus

c. Focus Lock

Pressing the shutter button half-way down
and holding it locks on the point of
focus you choose.

A steam locomotive and several train cars are parked on tracks at a wooden station. The locomotive is black with the number 12 on its side. The train cars are dark green and have "BIG SANDY RR. & TIMBER CO." written on them. In the background, there are wooden buildings and a large tree.

Understanding Camera Functions

Automatic Focus

a. Focus Delay.

b. Picking Where to Focus.

c. Focus Lock.

d. Continuous Focus Mode

Camera automatically tracks a moving subject.

A photograph of a steam locomotive and several train cars at a railway yard. The locomotive is black with a white number '12' on its side. The train cars are green and black. In the background, there are wooden buildings and a large tree. The text is overlaid on the image.

Understanding Camera Functions

Automatic Focus

- a. Focus Delay
- b. Picking Where to Focus
- c. Focus Lock
- d. Continuous Focus Mode
- e. **Manual Focus**

Remote Camera Functions

There are a couple of ways to remotely control your DSLR.
An electronic shutter release.

CamFi uses Wi-Fi from
a computer
or phone.



Remote Camera Functions

Helicon Focus uses a computer to adjust the focus from front to back of a scene by stacking several images together.

Normal short D of F.



Stacked Helicon D of F.

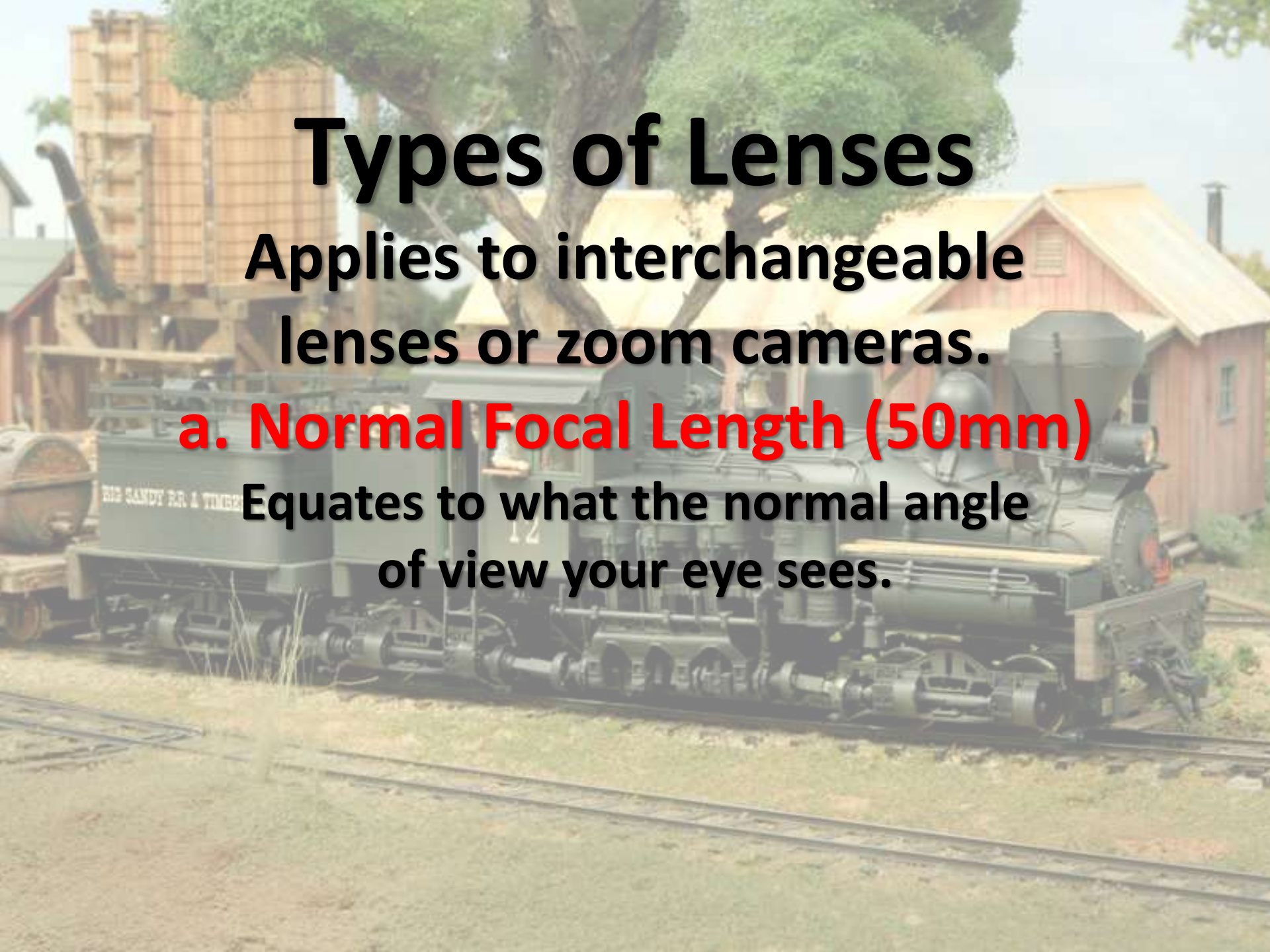


Types of Lenses

Applies to interchangeable lenses or zoom cameras.

a. Normal Focal Length (50mm)

Equates to what the normal angle of view your eye sees.

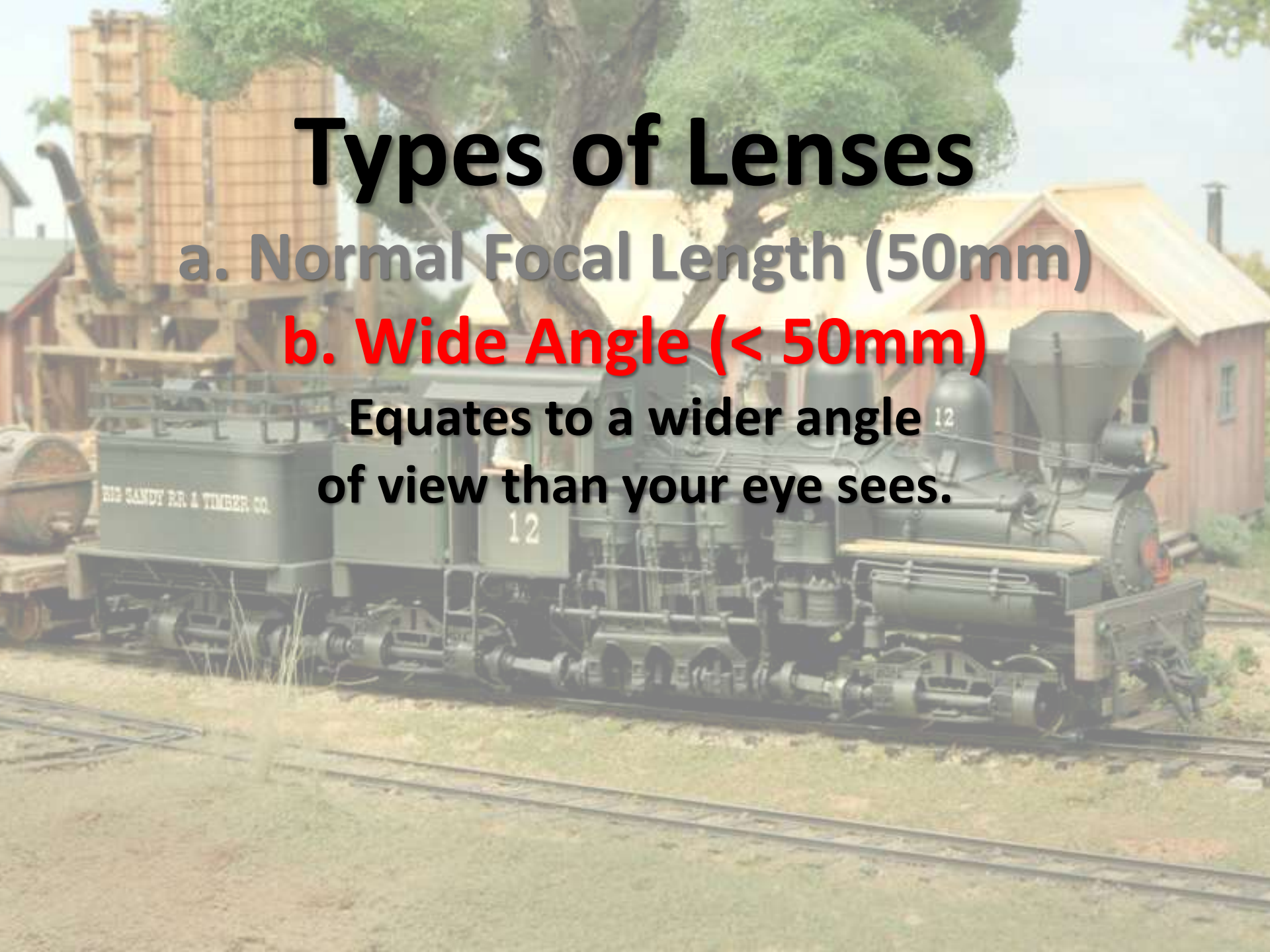


Types of Lenses

a. Normal Focal Length (50mm)

b. Wide Angle (< 50mm)

Equates to a wider angle
of view than your eye sees.



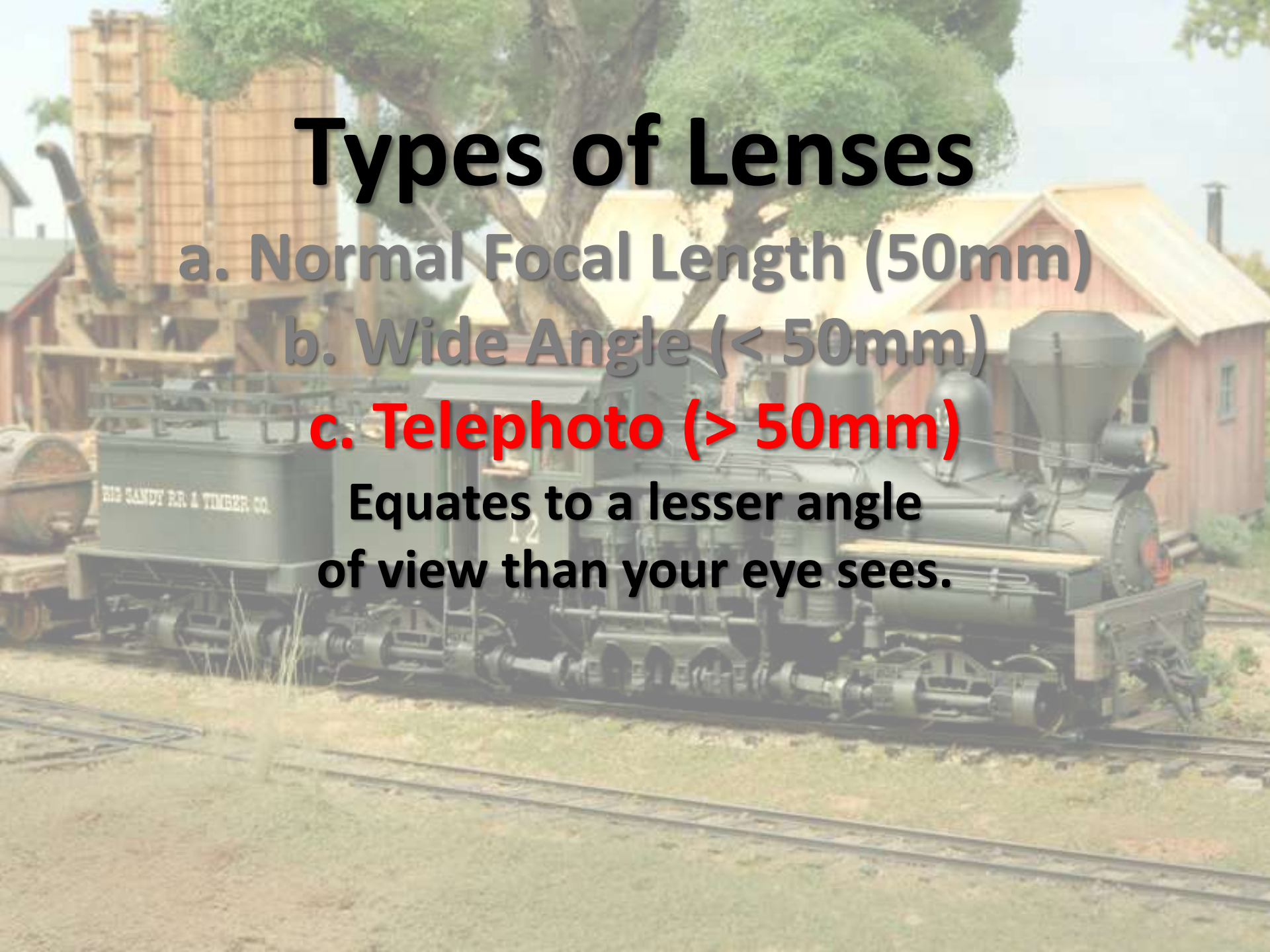
Types of Lenses

a. Normal Focal Length (50mm)

b. Wide Angle ($< 50\text{mm}$)

c. **Telephoto ($> 50\text{mm}$)**

Equates to a lesser angle
of view than your eye sees.



Types of Lenses

a. Normal Focal Length (50mm)

b. Wide Angle (< 50mm)

c. Telephoto (> 50mm)

d. Macro (close focusing)

For close-up focusing, sometimes can reproduce actual size of the subject on the image sensor.

Types of Lenses

a. Normal Focal Length (50mm)

b. Wide Angle (< 50mm)

c. Telephoto (> 50mm)

d. Macro (close focusing)

e. Fish-eye (extreme wide angle)



Types of Lenses

a. Normal Focal Length (50mm)

b. Wide Angle (< 50mm)

c. Telephoto (> 50mm)

d. Macro (close focusing)

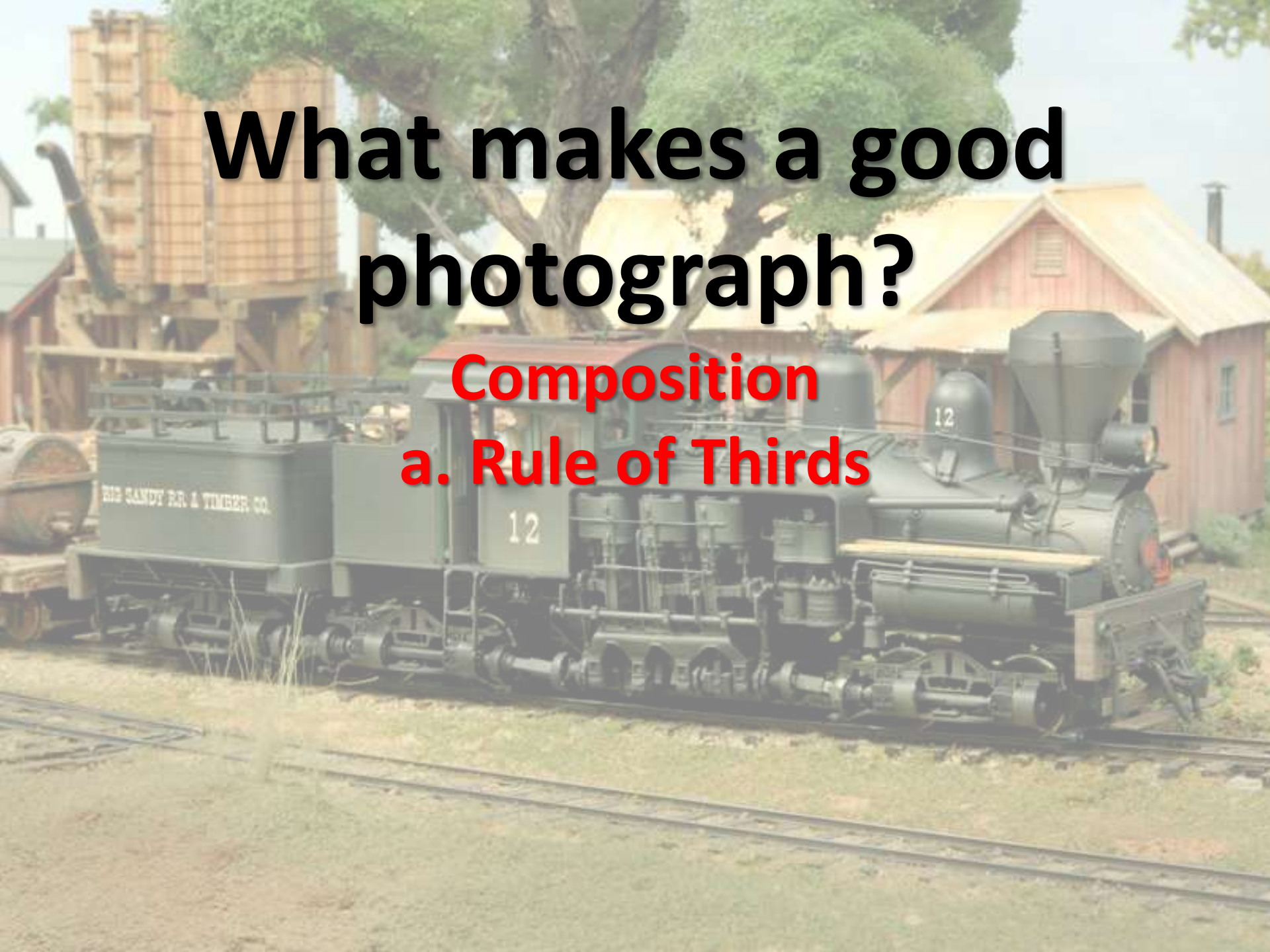
e. Fish-eye (extreme wide angle)

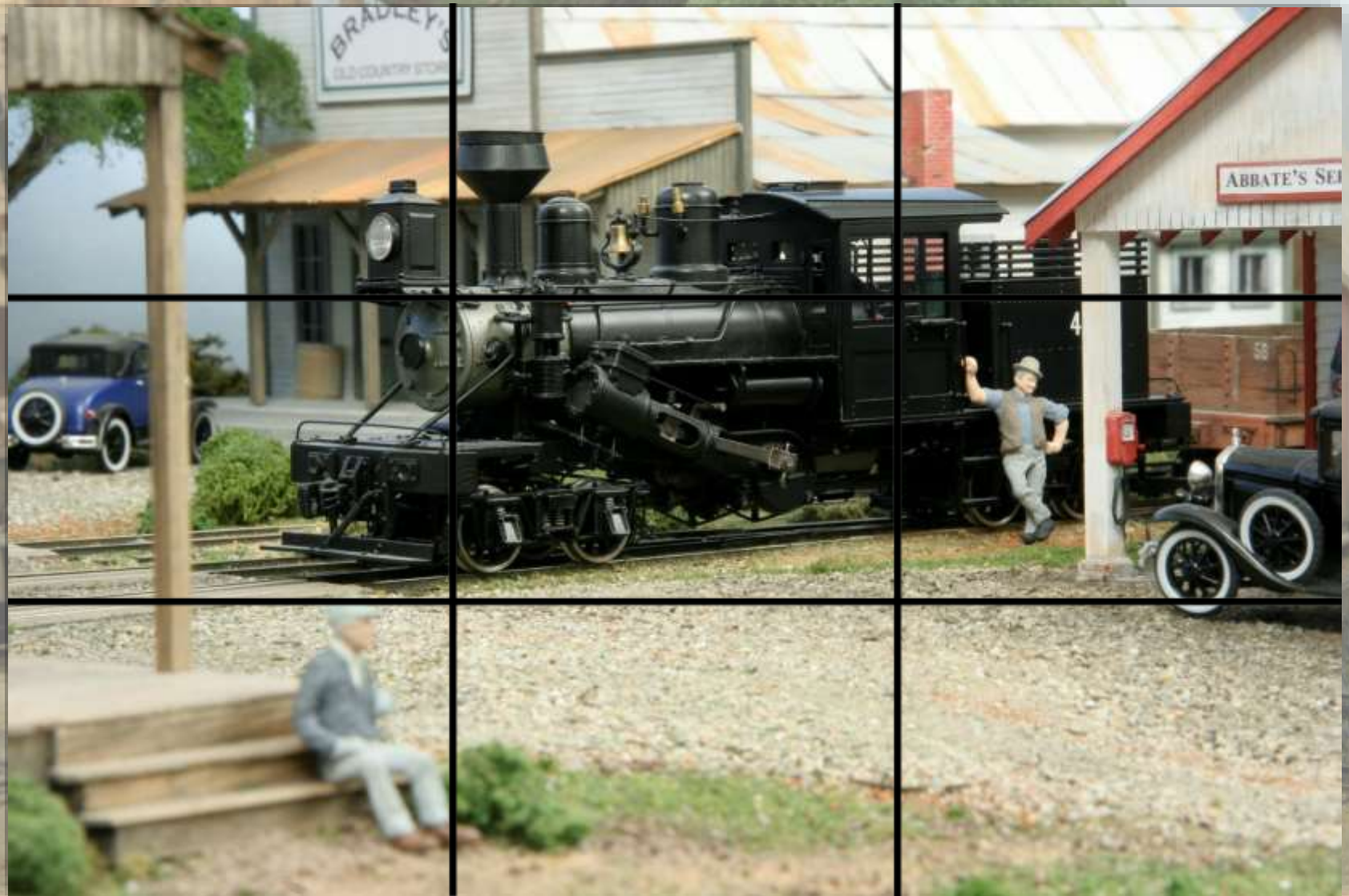
f. Zoom (variable focal length)

Generally not as sharp as a
fixed focal length lenses.

What makes a good photograph?

Composition
a. Rule of Thirds





Main subject is at a $1/3^{\text{rd}}$ point in the photo.

What makes a good photograph?

Composition

a. Rule of Thirds

b. Breaking Rules

Rules are made to be broken,
if the results are still artistically pleasing.





Main subject is offset in the photo.

What makes a good photograph?

Composition

- a. Rule of Thirds
- b. Breaking Rules
- c. Leading Lines



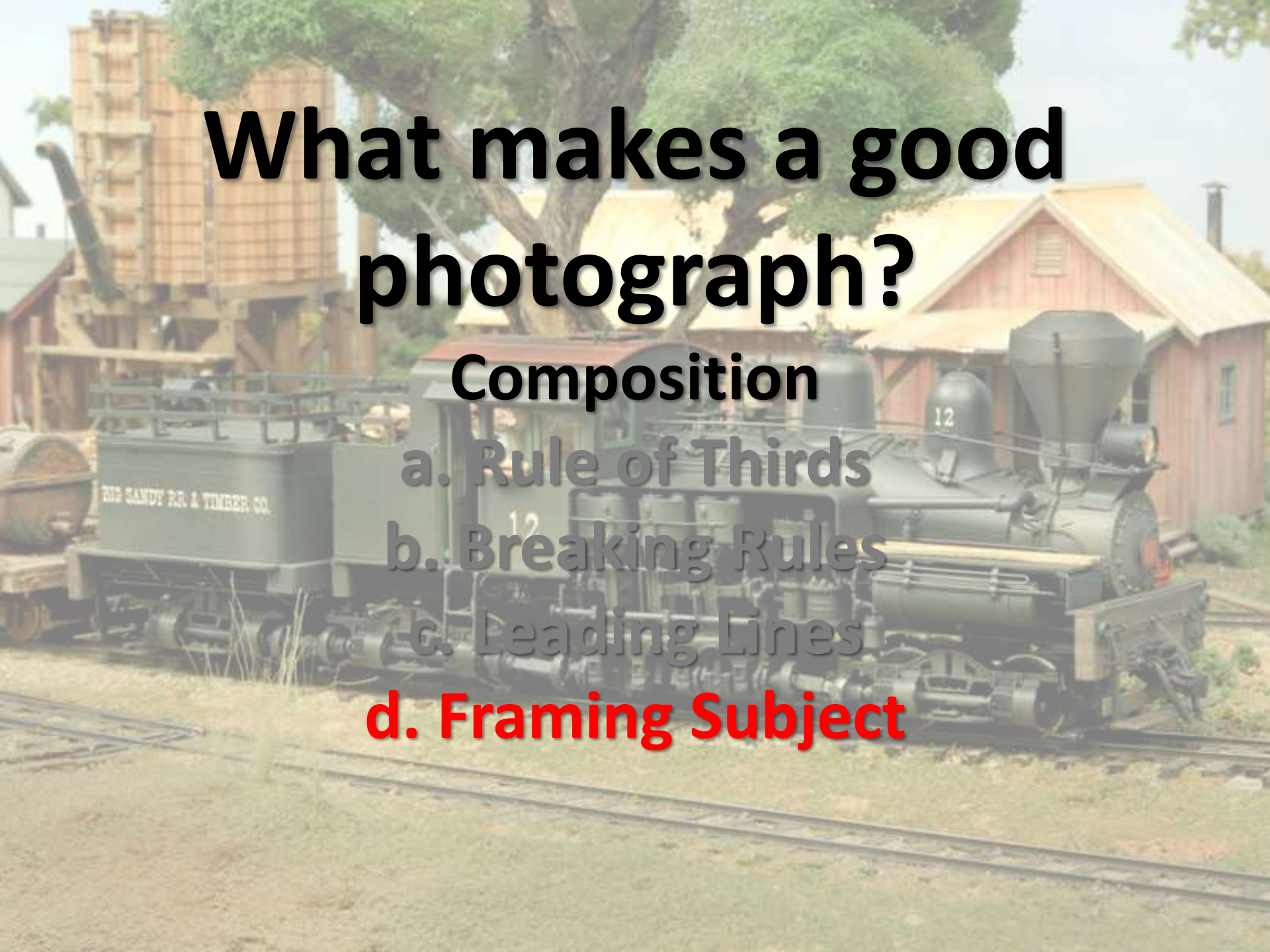


Leading lines take the eye into the subject.

What makes a good photograph?

Composition

- a. Rule of Thirds
- b. Breaking Rules
- c. Leading Lines
- d. Framing Subject**





The main subject is framed by the building.

What makes a good photograph?

Simplicity

a. Keep it Simple S####d (KISS)





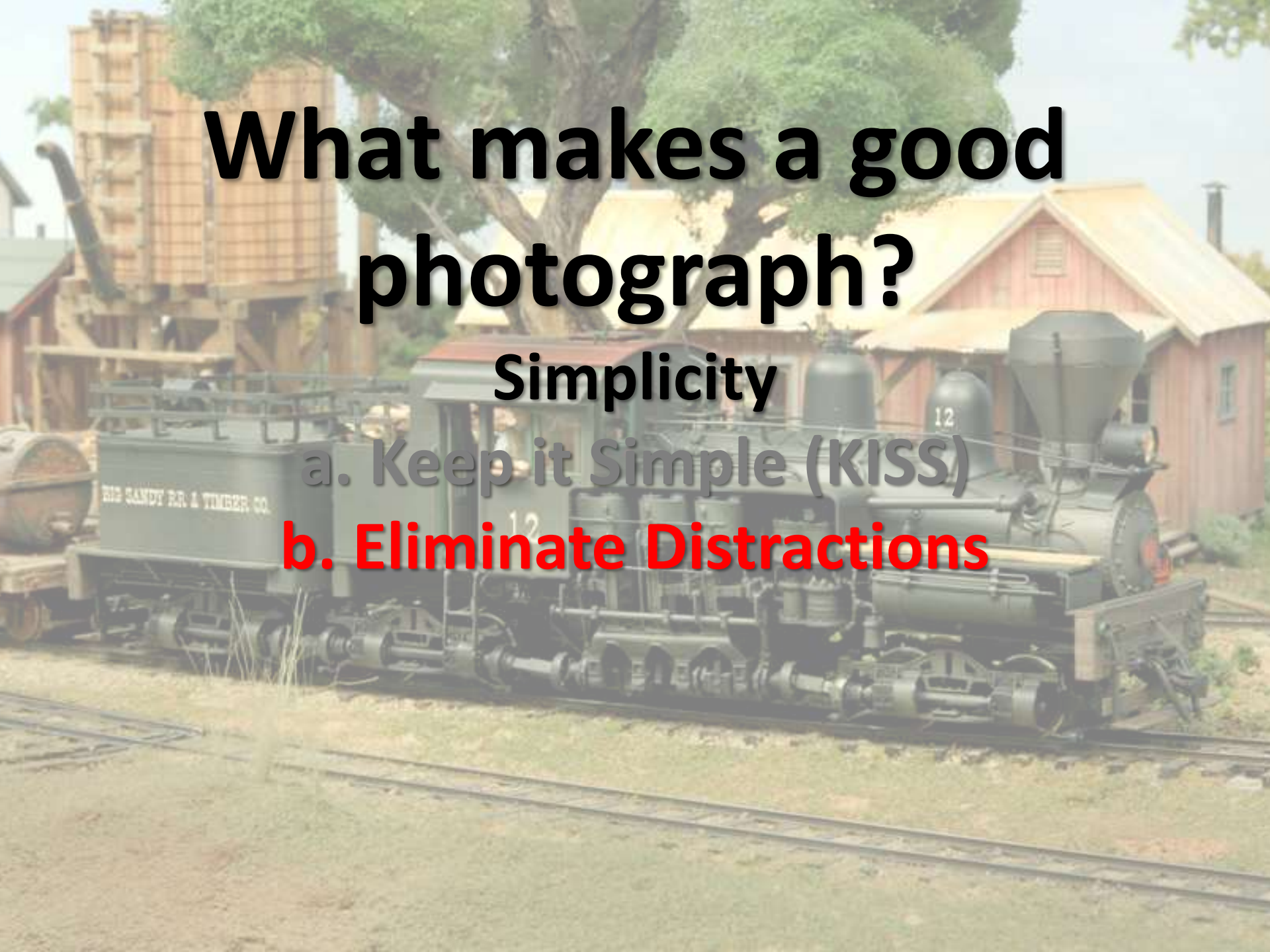
Only one main subject in the view.

What makes a good photograph?

Simplicity

a. Keep it Simple (KISS)

b. Eliminate Distractions





Distractions should be kept to a minimum.

What makes a good photograph?



Simplicity

- a. Keep it Simple (KISS)
- b. Eliminate Distractions
- c. **Crop Out Unwanted Elements**



Before



After



What makes a good photograph?

Simplicity

- a. Keep it Simple (KISS)
- b. Eliminate Distractions
- c. Cropping out Unwanted Elements
- d. Removing Unnecessary Elements**

Before



After



Look at tree in background and foreground grass.

What makes a good photograph?

Lighting

Most layout lighting is not suitable for good photography.

The ratio from light to dark is too great for good publication and is not even enough.

Direct flash gives unrealistic results.





Typical layout lighting.

What makes a good photograph?

Exposure

Exposure can be adjusted using manual mode in the camera or the computer.





Over Exposure.



Under Exposure.



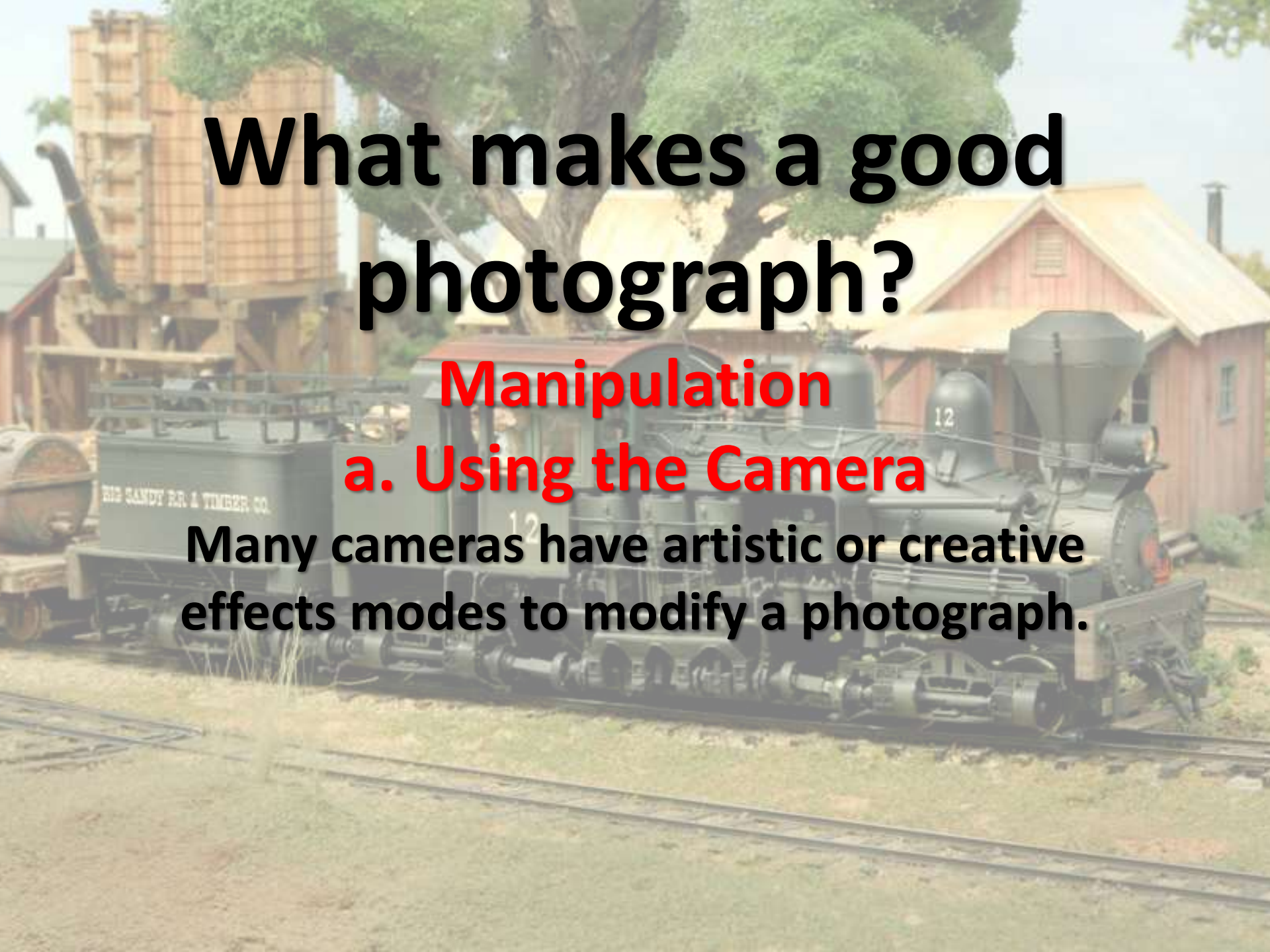
Proper Exposure.

What makes a good photograph?

Manipulation

a. Using the Camera

Many cameras have artistic or creative effects modes to modify a photograph.





Simulated nighttime scene.

What makes a good photograph?

Manipulation

a. Using the Camera

b. Using Computer Software

Most image editing software allows you to make a variety of changes to the original image.



Creative zoom effect added in the computer.



Smoke and light effect added in the computer.



You can't always believe what you see!



**Hopefully, this program
improves your results
and produces publishable
prize-winning model
railroad photographs.**

NMRA Palmetto Division #7

Photo Contest Rules

Photographs

Photos can be submitted only by NMRA members in good standing.

Photos must be of a model railroad subject.

Photos must be 8" x 10" size prints.

Photos may be B&W or Color.

A member may submit up to three photographs per meeting.

Prints may be mounted or unmounted but not framed or matted.

There is no time constraint as to when the photo was taken.

All photos shall be taken by the person submitting the photos.

All entries will have information identifying the maker on the back.

No identifying information shall be on the front side of the photo.

Photos will be submitted at the regularly scheduled meeting.

Winning photos are not eligible for entry in subsequent photo contests.

NMRA Palmetto Division #7

Photo Contest Rules

Judging

Judging will be by popular vote of the members present at the meeting.

Photos will be numbered by the contest committee.

They will be displayed on tables in the meeting room.

Members will be given a ballot to make their choice for the best photo.

The photos with the three highest number of votes will be declared winners.

First, second, and third place will be awarded certificates.

In the event of a tie the photo committee will determine the winner.

Winners will be announced at the end of the meeting.

**Any questions can be directed to the photo contest committee chair,
Bruce Gathman at 864-850-3642 or shaygearhead@bellsouth.net .**



**Enter your prize-winning
photos in the upcoming
NMRA Palmetto Division
meeting photo contest.**