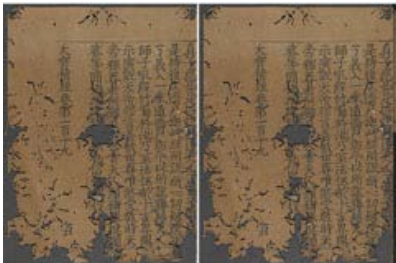
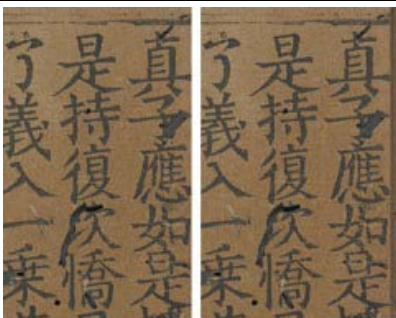




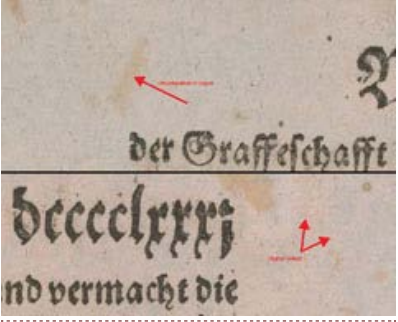
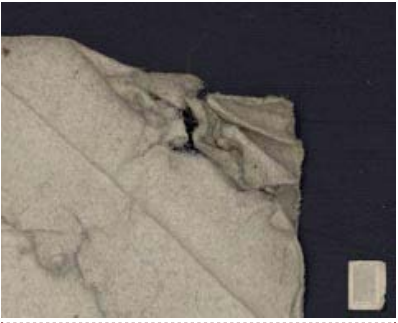


This page provides references for Stanford University Libraries Digital Production Group staff members performing imaging and Image QC auditing. This page is freely shared with vendors and partner institutions.

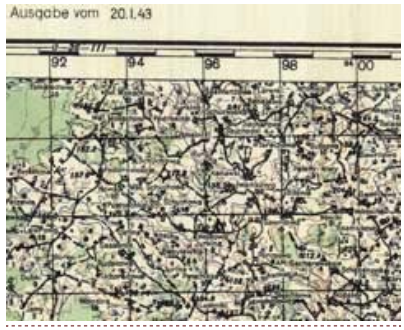

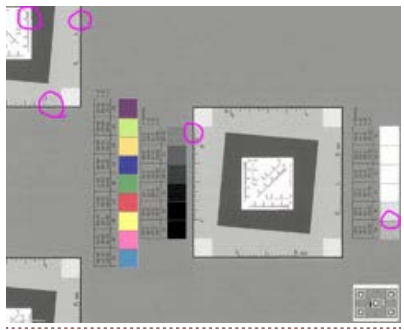

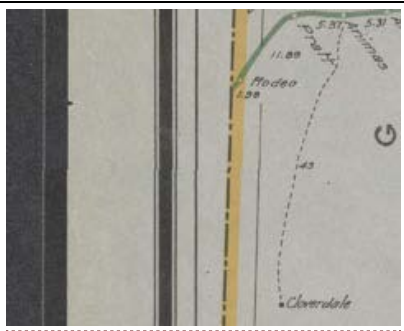
Additional information is available on the University of Maryland Libraries webpage for "Common Imaging Problems" by Steven Puglia, Jeffrey A. Reed, Erin Rhodes, National Archives and Records Administration

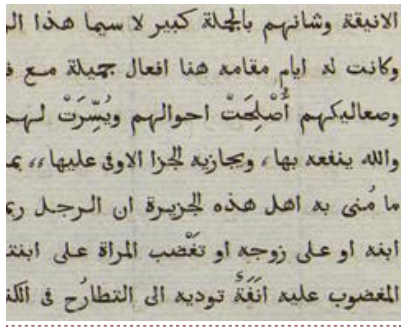
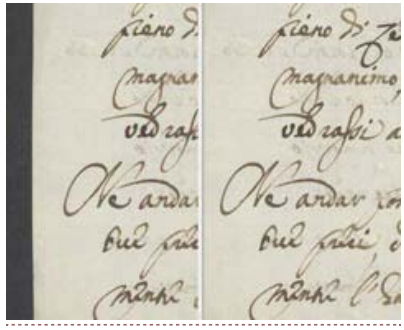
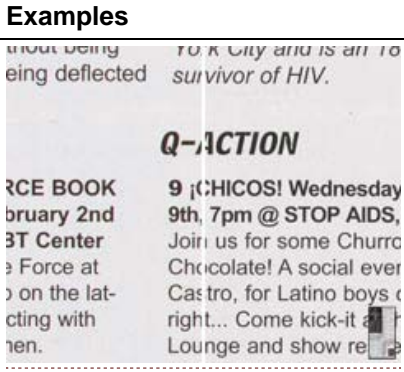


Stanford University Libraries "Cropping Guide" is also available online and for download.

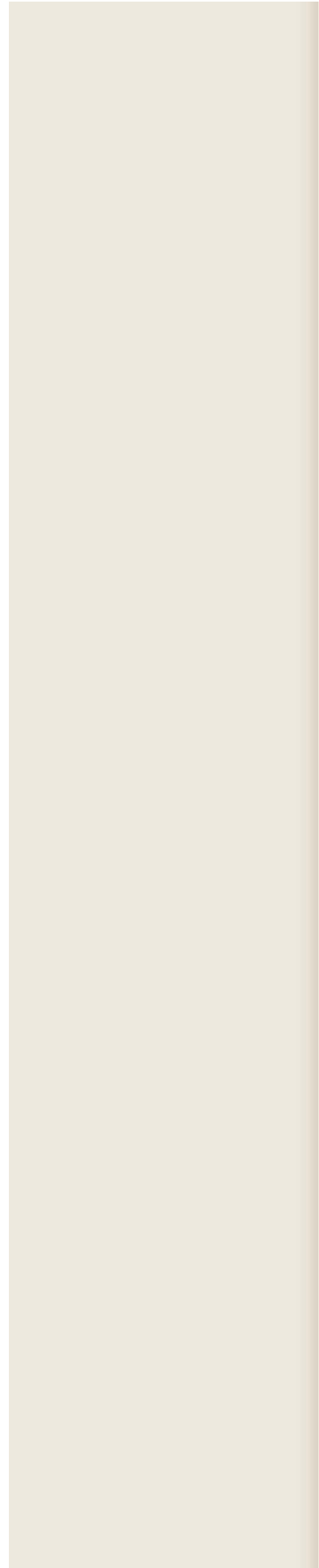
Audio and video reformatting defects are available at Stanford University Libraries "A/V Artifact Atlas".

- | Examples | Descriptions | Appearances | Causes | Remedies |
|---|--|---|--|---------------------------|
|  | Crop: text cut-off (unacceptable, acceptable) | Broad: Item runs out of frame or out of view
Narrow: Portion of text not visible | Broad: Imaging setup defect
Narrow: Image framed too close (or cropped in post-process) | Remake with a wider frame |
|  | Crop: text cut-off (unacceptable, acceptable) | Broad: Item runs out of frame or out of view
Narrow: Portion of text not visible | Broad: Imaging setup defect
Narrow: Image framed too close (or cropped in post-process) | Remake with a wider frame |
|  | Crop: text cut-off (unacceptable) | Broad: Item runs out of frame or out of view
Narrow: Portion of text not visible | Broad: Imaging setup defect
Narrow: Image framed too close (or cropped in post-process) | Remake with a wider frame |
| | | | | Diagnose and |

	Digital artifacts: banding or posterization (unacceptable, acceptable)	Broad: Abrupt changes in or exaggerated color or tonal gradation Narrow: Banding, color or tonal posterization	Broad: Imaging system defect Narrow: Raw file processing error or poorly made gain or LCC file	tune the processing system or re-create the gain file before remaking the image file
	Digital artifacts: banding or posterization (unacceptable, acceptable)	Broad: Abrupt changes in or exaggerated color or tonal gradation Narrow: Banding, color or tonal posterization	Broad: Imaging system defect Narrow: Raw file processing error or poorly made gain or LCC file	Diagnose and tune the processing system or re-create the gain file before remaking the image file. Verify that the source materials do not contain the discoloration.
Examples	Descriptions	Appearances	Causes	Remedies
	Digital artifacts: banding (unacceptable)	Broad: Pattern of lines extending across the frame, most apparent in darker values Narrow: Banding, "horizontal stripes"	Broad: Imaging system defect Narrow: Raw file processing error	Diagnose and fix or tune the imaging system
	Digital artifacts: banding (unacceptable)	Broad: Pattern of lines extending across the frame, most apparent in darker values Narrow: Banding, "horizontal stripes"	Broad: Imaging system defect Narrow: Raw file processing error	Diagnose and fix or tune the imaging system
	Digital artifacts: banding (unacceptable)	Broad: Pattern of lines extending across the frame, most apparent in darker values Narrow: Banding, "horizontal stripes"	Broad: Imaging system defect Narrow: Raw file processing error	Diagnose and fix or tune the imaging system
		Broad: Defect on	Broad: Imaging	Diagnose and

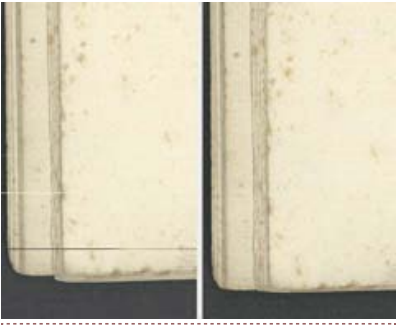




	Digital artifacts: banding (unacceptable)	a line or a small number of lines Narrow: Banding, "vertical stripes"	system defect Narrow: Raw file processing error	fix or tune the imaging system
	Digital artifacts: blocking defect (unacceptable)	Broad: Defect on a line or a number of lines in an array Narrow: Jagged lines	Broad: Imaging system defect Narrow: Raw file processing error	Diagnose and fix or tune the imaging system
Examples	Descriptions	Appearances	Causes	Remedies
	Digital artifacts: blocking defect (unacceptable)	Broad: Defect on a line or a number of lines in an array Narrow: Jagged lines	Broad: Imaging system defect Narrow: Raw file processing error	Diagnose and fix or tune the imaging system
	Digital artifacts: blocking defect (unacceptable)	Broad: Defect on a line or a number of lines in an array Narrow: Jagged lines	Broad: Imaging system defect Narrow: Raw file processing error	Diagnose and fix or tune the imaging system
	Digital artifacts: cameraback defect (unacceptable)	Broad: Defect on a line or a small number of lines Narrow: Loss of alignment; pixel/row offset	Broad: Imaging system defect Narrow: Raw file processing error or hardware defect such as dirt on scanner platen or dead sensors	Diagnose and fix or tune the imaging system
	Digital artifacts: channel misregistration	Broad: Color fringing, especially visible in areas of high contrast Narrow: Color	Broad: Imaging system defect Narrow: Sensor misalignment	Diagnose and fix or tune the imaging system






	(unacceptable)	fringing or color channel offset	or processing error	
	Digital artifacts: channel misregistration (unacceptable, acceptable)	Broad: Color fringing, especially visible in areas of high contrast Narrow: Color fringing or color channel offset	Broad: Imaging system defect Narrow: Sensor misalignment or processing error	Diagnose and fix or tune the imaging system
Examples	Descriptions	Appearances	Causes	Remedies
	Digital artifacts: channel misregistration (unacceptable)	Broad: Color fringing, especially visible in areas of high contrast Narrow: Color fringing or color channel offset	Broad: Imaging system defect Narrow: Sensor misalignment or processing error	Diagnose and fix or tune the imaging system
	Digital artifacts: color cast (unacceptable, acceptable)	Broad: Poor color or tonal fidelity Narrow: Colors or tones do not resemble source material	Broad: Imaging system defect or post-processing error Narrow: Error caused by poor color management or processing settings	Remake after adjusting processing or color profile settings
	Digital artifacts: compression artifacts (unacceptable))	Broad: Visual texture Narrow: Patterned texture, most apparent in high-contrast areas, pixel-set squares not easily visible	Broad: Scan specification artifact Narrow: Lossy compression applied or set too high	Remake with no or lossless compression
	Digital artifacts: compression artifacts	Broad: Visual texture Narrow: Patterned texture, most apparent in high-contrast	Broad: Scan specification artifact Narrow: Lossy compression	Remake with no or lossless compression


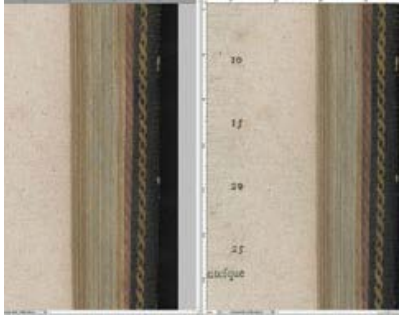







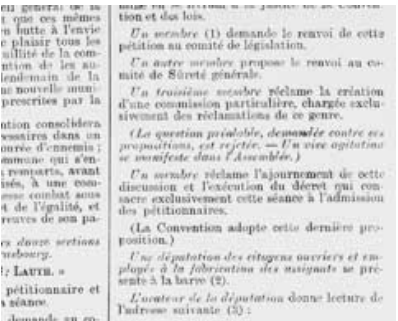

	(unacceptable))	areas, pixel-set squares not easily visible	applied or set too high	
	Digital artifacts: compression artifacts (unacceptable)	Broad: Visual texture Narrow: Patterned texture, most apparent in high-contrast areas, pixel-set squares not easily visible	Broad: Scan specification artifact Narrow: Lossy compression applied or set too high	Remake with no or lossless compression
Examples	Descriptions	Appearances	Causes	Remedies
	Digital artifacts: compression artifacts (unacceptable)	Broad: Visual texture Narrow: "Ringing" at dark-light edges	Broad: Scan specification artifact Narrow: Lossy compression applied or set too high	Remake with no or lossless compression
	Digital artifacts: microfilm scanning compression artifacts (unacceptable)	Broad: Visual texture Narrow: "Ringing" at dark-light edges, also patterned texture visible	Broad: Scan specification artifact Narrow: Lossy compression applied or set too high	Remake with no or lossless compression
	Digital artifacts: noise (unacceptable)	Broad: Visual texture Narrow: In dark area, colored dots visible (hard to discern in light areas)	Broad: Imaging system defect Narrow: Raw file processing error or poorly made gain or LCC file	Remake after adjusting processing settings or with a different device
	Digital artifacts: poor color rendering (unacceptable)	Broad: Poor color or tonal fidelity Narrow: Colors or tones do not resemble source	Broad: Imaging system defect or post-processing error Narrow: Error caused by	Remake after adjusting processing or color profile

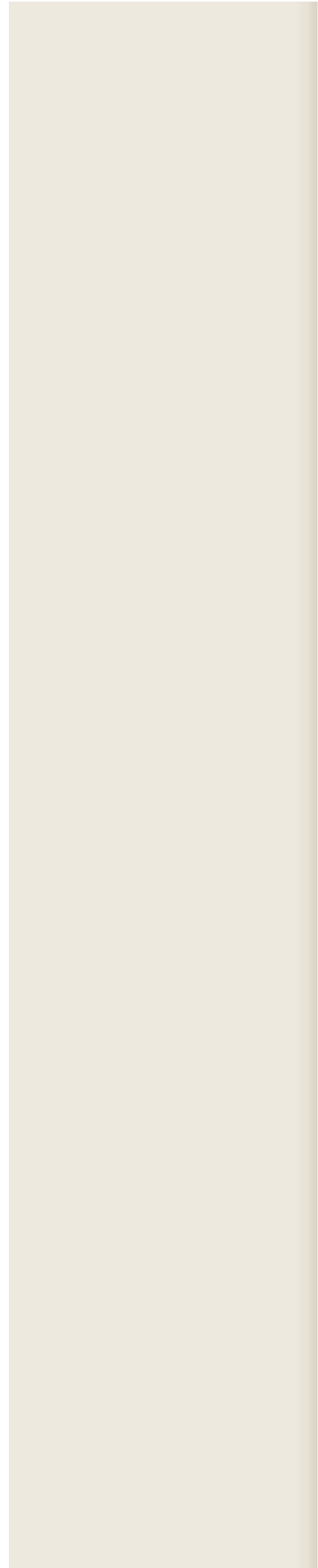
		material	poor color management or processing settings	settings
	Digital artifacts: scanning chatter/misalignment (unacceptable)	Broad: Defect on a line or a small number of lines Narrow: Distortion along a line (vertical as shown) with obvious color fringing	Broad: Scanning system defect Narrow: Scanner mechanical defect or device was bumped during scan	Limit movement around active scanning and rescan; if mechanical, fix the device
Examples	Descriptions	Appearances	Causes	Remedies
	Digital artifacts: scanning chatter/misalignment (unacceptable)	Broad: Defect on a line or a small number of lines Narrow: Distortion along a line (vertical as shown) with obvious color fringing	Broad: Scanning system defect Narrow: Scanner mechanical defect or device was bumped during scan	Limit movement around active scanning and rescan; if mechanical, fix the device
	Digital artifacts: scanning chatter/misalignment (unacceptable)	Broad: Defect on a line or a small number of lines Narrow: Distortion along a line (horizontal as shown), hard to see	Broad: Scanning system defect Narrow: Scanner mechanical defect or device was bumped during scan	Limit movement around active scanning and rescan; if mechanical, fix the device
	Digital artifacts: scanning chatter/misalignment (unacceptable, acceptable)	Broad: Defect on a line or a small number of lines Narrow: Distortion along a line (vertical as shown) with obvious color fringing	Broad: Scanning system defect Narrow: Scanner mechanical defect or device was bumped during scan	Limit movement around active scanning and rescan; if mechanical, fix the device
	Digital artifacts: scanning chatter/misalignment (unacceptable,	Broad: Defect on a line or a small number of lines Narrow: Distortion along a line (vertical as shown)	Broad: Scanning system defect Narrow: Scanner mechanical defect or	Limit movement around active scanning and rescan; if

	acceptable)	with obvious color fringing	device was bumped during scan	mechanical, fix the device
	Digital artifacts: scanning chatter/misalignment (unacceptable)	Broad: Defect on a line or a small number of lines Narrow: Distortion along a line (horizontal as shown), hard to see	Broad: Scanning system defect Narrow: Scanner mechanical defect or device was bumped during scan	Limit movement around active scanning and rescan; if mechanical, fix the device
Examples	Descriptions	Appearances	Causes	Remedies
	Digital artifacts: loss of information/detail (unacceptable)	Broad: Lack of fine detail, artificially smooth, blurred areas of color Narrow: Detail and texture does not resemble source material	Broad: Post-processing error Narrow: Error caused by excessive post-processing/use of noise reduction, blur or despeckle filters	Remake from RAW little or no noise reduction filtering
	Digital artifacts: loss of information/detail (unacceptable)	Broad: Lack of fine detail, artificially smooth, blurred areas of color Narrow: Detail and texture does not resemble source material	Broad: Post-processing error Narrow: Error caused by excessive post-processing/use of noise reduction, blur or despeckle filters, or excessive wavelet compression (JPEG 2000)	Remake from RAW little or no noise reduction filtering
	Illumination: mixed lighting (unacceptable, acceptable)	Broad: Tonal and color variation in film scan Narrow: Washed-out and discolored area (right side)	Broad: Imaging system defect Narrow: Uneven color and tonality caused by multiple light sources or poorly made gain file	Remake after normalizing the light source(s), minimizing light reflections from colored walls or objects, closing window shades, and/or turning-off overhead lights

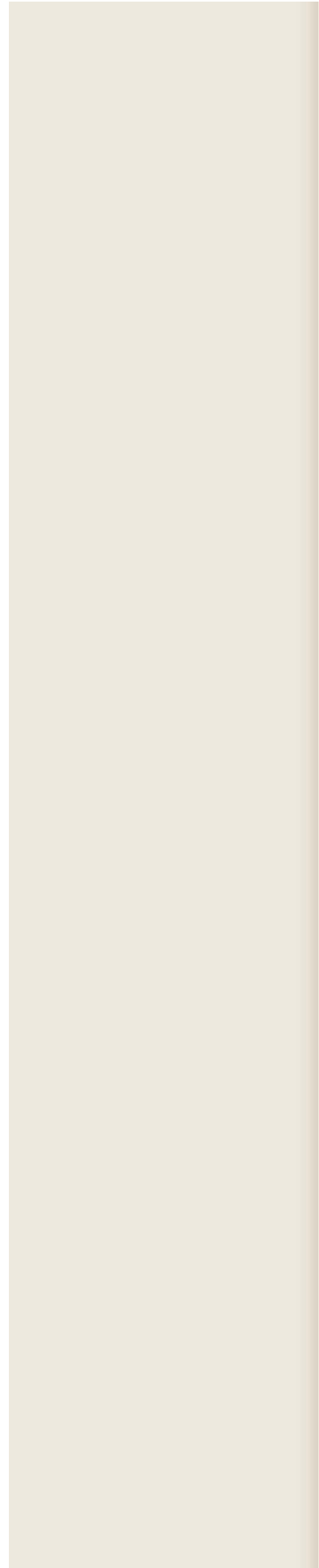
	Illumination: uneven processing (acceptable)	Broad: Tonal variation in film scan Narrow: Dark area (right side) and washed out foreground	Broad: Poor film processing of source material Narrow: Uneven densities/tones and occasional staining caused by poorly processed film	Although retouching might improve the image, this is generally acceptable if it accurately represents the source material
	Illumination: uneven lighting (unacceptable)	Broad: Tonal variation in photo Narrow: Light area (lower left) and dark area (center), echoed in the background material	Broad: Uneven lighting Narrow: Lights not properly adjusted or positioned	Remake after adjusting the position, power, and modifications of the light sources
Examples	Descriptions	Appearances	Causes	Remedies
	Illumination: uneven lighting (unacceptable)	Broad: Tonal variation in photo Narrow: Light area (lower left) and dark area (center), echoed in the background material	Broad: Uneven lighting Narrow: Lights not properly adjusted or positioned	Remake after adjusting the position, power, and modifications of the light sources
	Illumination: uneven lighting (unacceptable)	Broad: Tonal variation in photo Narrow: Light area (lower left) and dark area (center), echoed in the background material	Broad: Uneven lighting Narrow: Lights not properly adjusted or positioned	Remake after adjusting the position, power, and modifications of the light sources
	Moiré: Bayer moiré (unacceptable, acceptable)	Broad: Visual texture Narrow: Faint color pattern (original is lithographic-type print)	Broad: Scanning system defect Narrow: Artificial pattern of colors appearing in the image; moiré caused by the overlay of a patterned image on a pixel-array device's Bayer filter sensor	Remake at different PPI (oversample) or with different technology
			Broad: Scanning system defect Narrow:	

	Moiré: Bayer moiré (unacceptable, acceptable)	Broad: Visual texture Narrow: Faint color pattern (original is copperplate engraving)	Artificial pattern of colors appearing in the image; moiré caused by the overlay of a patterned image on a pixel-array device's Bayer filter sensor	Remake at different PPI (oversample) or with different technology
	Moiré: Bayer moiré (unacceptable, acceptable)	Broad: Visual texture Narrow: Faint color pattern in foreedge	Broad: Scanning system defect Narrow: Artificial pattern of colors appearing in the image; moiré caused by the overlay of a patterned image on a pixel-array device's Bayer filter sensor	Remake at different PPI (oversample) or with different technology
Examples	Descriptions	Appearances	Causes	Remedies
	Moiré: Bayer moiré (unacceptable)	Broad: Visual texture Narrow: Color pattern (on black and white original), dots relatively visible (original is printed halftone)	Broad: Scanning system defect Narrow: Artificial pattern of colors appearing in the image; moiré caused by the overlay of a patterned image on a pixel-array device's Bayer filter sensor	Remake at different PPI (oversample) or with different technology
	Moiré: Bayer moiré (unacceptable)	Broad: Visual texture Narrow: Color pattern (on black and white original), dots relatively visible (original is printed halftone)	Broad: Scanning system defect Narrow: Artificial pattern of colors appearing in the image; moiré caused by the overlay of a patterned image on a pixel-array device's Bayer filter sensor	Remake at different PPI (oversample) or with different technology
	Moiré: halftone	Broad: Visual texture Narrow: Black and white moiré	Broad: Scan specification artifact Narrow: Artificial pattern appearing in	Remake at different PPI (oversample)

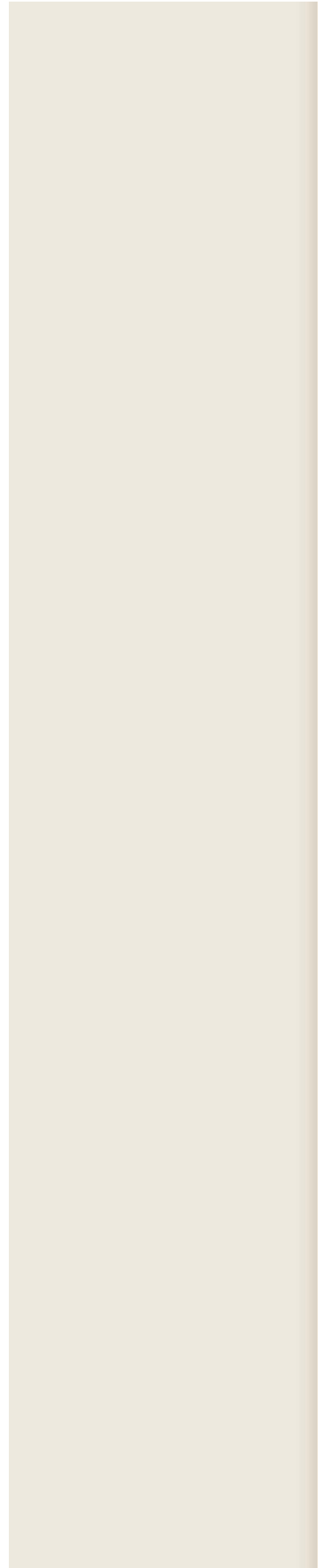
	pattern moire (unacceptable)	(on black and white original), relatively visible (original is printed halftone)	the image; moire caused by the overlay of a patterned image on a pixel-array device's Bayer filter sensor	or with different technology
	Moiré: Newton's Rings (unacceptable)	Broad: Visual texture Narrow: Usually a pattern of multi-colored, concentric rings appearing in one or more regions of the image	Broad: Scanning system defect Narrow: Artificial pattern of colors appearing in the image; caused by light reflections between a film and platen surface due to poor film contact	Remake after re-seating the film or use an anti-Newton glass for the platen
	Organics: bleed-through, print-through (acceptable)	Broad: Bleed-thru from back of original Narrow: Sticker or printing on reverse visible	Broad: Feature of original item (not a defect) Narrow: Feature of original item (not a defect)	Although retouching might improve the image, this is generally acceptable if it accurately represents the source material
Examples	Descriptions	Appearances	Causes	Remedies
	Organics: bleed-through, print-through (acceptable)	Broad: Double imprint, ghost image Narrow: Faint line next to dark line; ghost letters next to desired letters	Broad: Feature of original item (not a defect) Narrow: Feature of original item (not a defect)	Although retouching might improve the image, this is generally acceptable if it accurately represents the source material
	Organics: damaged film (acceptable)	Broad: Damaged film or photograph Narrow: Portion of image missing, light oval "dot" surrounded by dark area	Broad: Feature of original item (not a defect) Narrow: Feature of original item (not a defect)	Although retouching might improve the image, this is generally acceptable if it accurately represents the source material
		Broad: Unwanted		



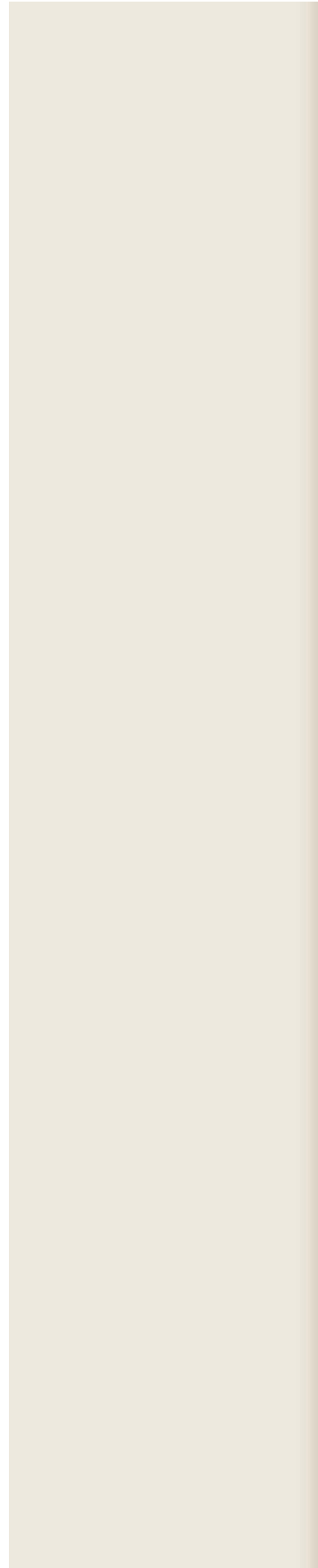




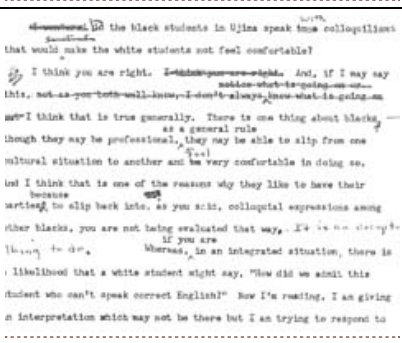
	Organics: dirt in mylar enclosure (unacceptable)	elements (dirt, hair, shadows, reflections, etc.) on or next to item being imaged Narrow: Dust and/or hair on object	Broad: Imaging setup defect Narrow: dirt in mylar	Clean and remake
	Organics: dirt on baseboard (unacceptable, acceptable)	Broad: Unwanted elements (dirt, hair, shadows, reflections, etc.) on or next to item being imaged Narrow: Dirt specks next to item being scanned	Broad: Imaging setup defect Narrow: dirt on baseboard	Clean and remake
	Organics: dirt on baseboard (unacceptable, acceptable)	Broad: Unwanted elements (dirt, hair, shadows, reflections, etc.) on or next to item being imaged Narrow: Dirt specks next to item being scanned	Broad: Imaging setup defect Narrow: dirt on baseboard	Clean and remake
Examples	Descriptions	Appearances	Causes	Remedies
	Organics: dirt on baseboard (unacceptable, acceptable)	Broad: Unwanted elements (dirt, hair, shadows, reflections, etc.) on or next to item being imaged Narrow: Dirt specks next to item being scanned	Broad: Imaging setup defect Narrow: dirt on baseboard	Clean and remake
	Organics: dirt on original (acceptable)	Broad: Unwanted elements (dirt, hair, shadows, reflections, etc.) on or next to item being imaged Narrow: dirt and smudges on object	Broad: Feature of original item (not a defect) Narrow: Feature of original item (not a defect)	Although retouching might improve the image, this is generally acceptable if it accurately represents the source material
	Organics: dot matrix	Broad: Typography with wide spacing and	Broad: Feature of original item (not a defect)	This is generally acceptable if it accurately represents the source material, some printed




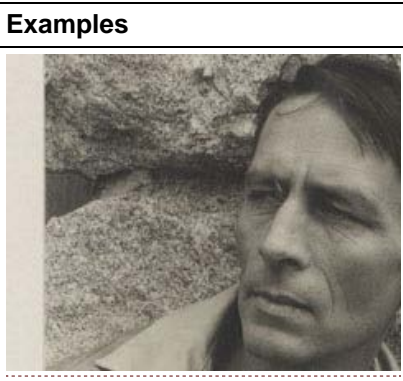







	printing (acceptable)	dot pattern Narrow: Dot matrix printing	Narrow: Feature of original item (not a defect)	text may require specialized processing for improved OCR performance
	Organics: double-printed (acceptable)	Broad: Double or blurry image or passages within the image Narrow: Double-printed page content	Broad: Feature of original item (not a defect) Narrow: Feature of original item (not a defect)	Although retouching might improve the image, this is generally acceptable if it accurately represents the source material
	Organics: dust on lens or sensor (unacceptable, unacceptable)	Broad: Unwanted elements (dirt, hair, etc.) appearing in consecutively produced images Narrow: Dust on lens or sensor	Broad: Imaging setup defect Narrow: Dust in imaging system	Clear the dust and remake
Examples	Descriptions	Appearances	Causes	Remedies
	Organics: fibers (unacceptable)	Broad: Unwanted elements (dirt, hair, shadows, reflections, etc.) on or next to item being imaged Narrow: White dust on photo ("negative dirt")	Broad: Imaging setup defect Narrow: fibers in image	Clean and remake
	Organics: finger (unacceptable)	Broad: Unwanted elements (dirt, hair, shadows, reflections, etc.) on or next to item being imaged Narrow: Finger holding page in image	Broad: Imaging setup defect Narrow: finger in image	Remake without the finger
	Organics: generational loss	Broad: Faded typography	Broad: Feature of original item (not a defect)	Although retouching might improve the image, this is generally

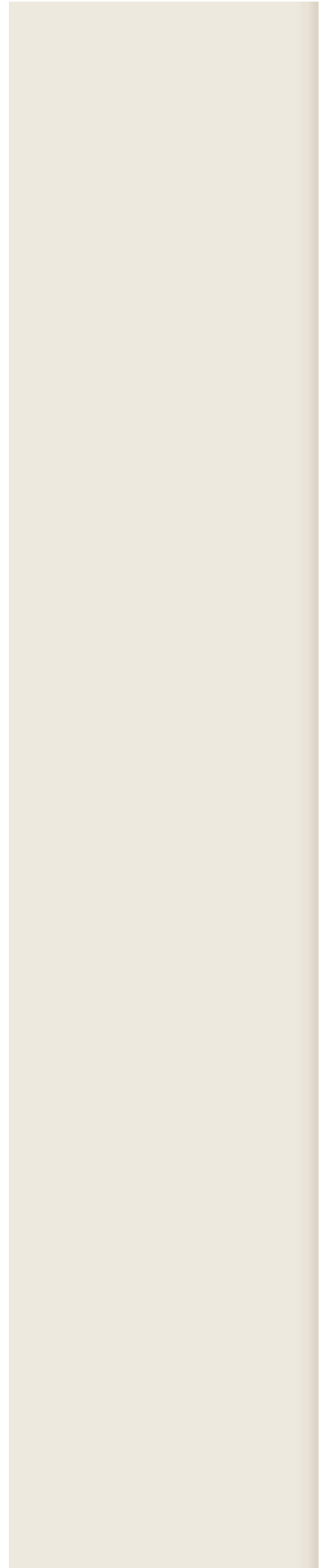


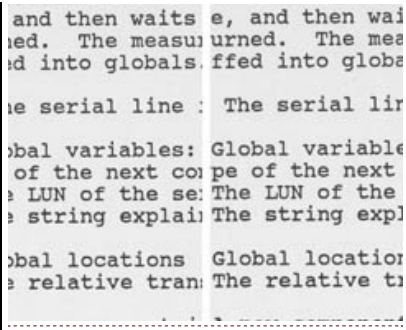
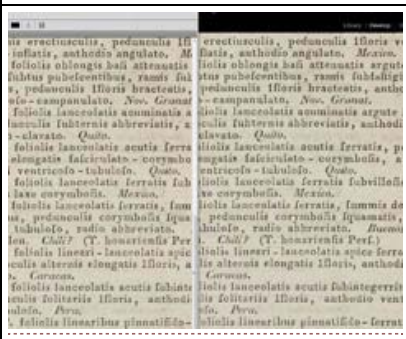
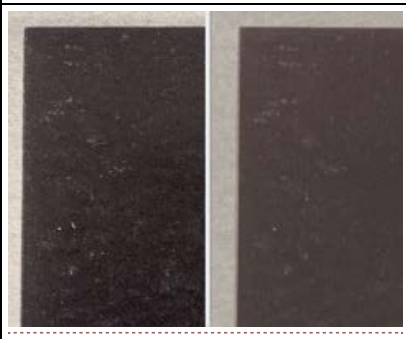

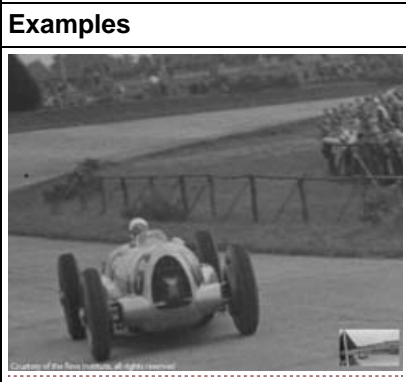
	(acceptable)	Narrow: Faded typography	Narrow: Feature of original item (not a defect)	acceptable if it accurately represents the source material
	Organics: ghosting (acceptable)	Broad: Double imprint, ghost image Narrow: Faint line next to dark line; ghost letters next to desired letters	Broad: Feature of original item (not a defect) Narrow: Feature of original item (not a defect)	Although retouching might improve the image, this is generally acceptable if it accurately represents the source material
	Organics: gutter shadow (unacceptable)	Broad: Unwanted elements (dirt, hair, shadows, reflections, etc.) on or next to item being imaged Narrow: Lighting casts a shadow across the book gutter	Broad: Imaging setup defect Narrow: angle of lights and positioning of the book contribute to gutter shadow	Remake after re-orienting the material in order to minimize the shadow
Examples	Descriptions	Appearances	Causes	Remedies
	Organics: hair (unacceptable)	Broad: Unwanted elements (dirt, hair, shadows, reflections, etc.) on or next to item being imaged Narrow: Dust and/or hair on image	Broad: Imaging setup defect Narrow: hair in image	Clean and remake
	Organics: hair (unacceptable)	Broad: Unwanted elements (dirt, hair, shadows, reflections, etc.) on or next to item being imaged Narrow: Dust and/or hair on image	Broad: Imaging setup defect Narrow: hair in image	Clean and remake
	Organics: insect (unacceptable)	Broad: Unwanted elements (dirt, hair, shadows, reflections, etc.) on or next to item being imaged	Broad: Imaging setup defect Narrow: insect	Consult with conservation as needed; clean and

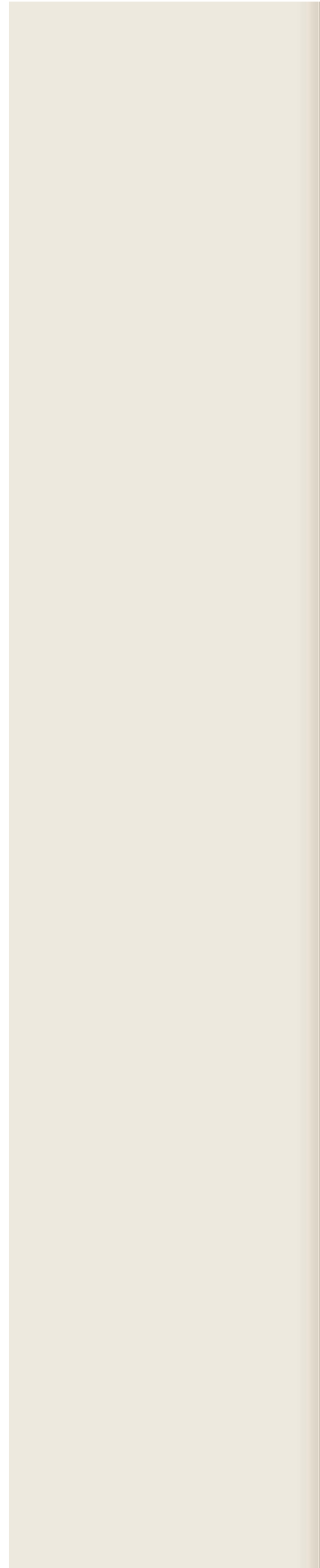
			Narrow: squashed insect on image	in image	remake
		Organics: irregular typeface (acceptable)	Broad: Unique Typography, graphics, and tabular content Narrow: Unique Typography used for newspaper headlines	Broad: Feature of original item (not a defect) Narrow: Feature of original item (not a defect)	This is generally acceptable if it accurately represents the source material, but it will likely impact OCR performance
		Organics: irregular typeface and graphic and tabular content (acceptable)	Broad: Unique Typography, graphics, and tabular content Narrow: Unique Typography and graphics used for newspaper advertisements	Broad: Feature of original item (not a defect) Narrow: Feature of original item (not a defect)	This is generally acceptable if it accurately represents the source material, but it will likely impact OCR performance
	Examples	Descriptions	Appearances	Causes	Remedies
		Organics: motion blur (acceptable)	Broad: Blurry image or passages within the photograph Narrow: Moving objects appear blurry in the photograph	Broad: Feature of original item (not a defect) Narrow: Feature of original item; long exposure (not a defect)	This is generally acceptable if it accurately represents the source material
		Organics: notation (acceptable)	Broad: Typography with script notation Narrow: Handwritten notation obscures or competes with text	Broad: Feature of original item (not a defect) Narrow: Feature of original item (not a defect)	This is generally acceptable if it accurately represents the source material, but it will likely impact OCR performance
		Organics: reflections (unacceptable)	Broad: Unwanted elements (dirt, hair, shadows, reflections, etc.) on or next to item being imaged Narrow:	Broad: Imaging setup defect Narrow: Light tones are reflected in	Mask/cover or remove the reflected items and



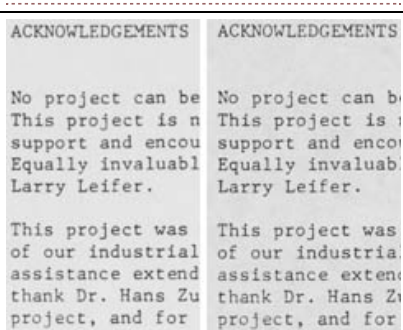

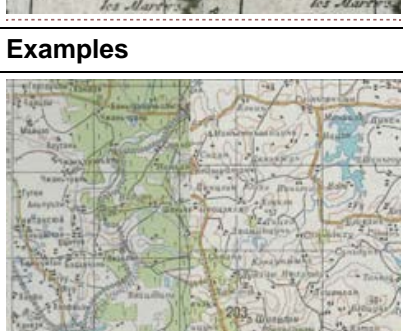
		Reflection visible in dark tones of photograph and background	coping glass or glossy materials	remake
	Organics: reflections (unacceptable)	Broad: Unwanted elements (dirt, hair, shadows, reflections, etc.) on or next to item being imaged Narrow: Reflections visible in curled portions of poster	Broad: Imaging setup defect Narrow: Light tones are reflected in coping glass or glossy materials	Flatten materials, mask any reflected items, and polarize or reposition light sources
	Organics: reflections (unacceptable)	Broad: Unwanted elements (dirt, hair, shadows, reflections, etc.) on or next to item being imaged Narrow: Reflections and texture of lamination material visible in dark tones	Broad: Imaging setup defect Narrow: Light tones are reflected in coping glass or glossy materials	Flatten materials, mask any reflected items, and polarize or reposition light sources
Examples	Descriptions	Appearances	Causes	Remedies
	Organics: scratch (unacceptable)	Broad: Unwanted elements (dirt, hair, shadows, reflections, etc.) on or next to item being imaged Narrow: Scratch on image	Broad: Imaging setup defect Narrow: scratches in coping glass or scanner platen are visible in the image	Check the original, then replace the glass and remake
	Organics: shadow (unacceptable)	Broad: Unwanted elements (dirt, hair, shadows, reflections, etc.) on or next to item being imaged Narrow: Shadow cast into image	Broad: Imaging setup defect Narrow: An object near the content cast a shadow during photograph	Clear the space between the light source and source materials and remake
	Organics: stained film (acceptable)	Broad: Areas of uneven tonality or blotches in a film scan Narrow: Chemical	Broad: Feature of original item (not a defect) Narrow: Feature of	Although retouching might improve the image, this is generally acceptable if

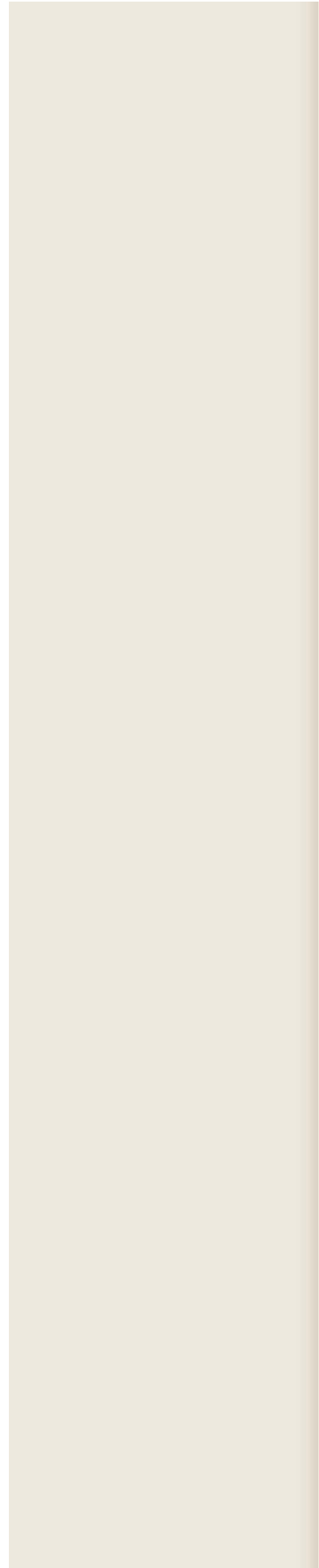
		stains or residue on film	original item (not a defect)	it accurately represents the source material
	Organics: watermark or imprint (acceptable)	Broad: Image or pattern showing through page content Narrow: Watermark showing	Broad: Feature of original item (not a defect) Narrow: Feature of original item (not a defect)	Backing the page with a dark color may reduce the impact of the watermark, especially for translucent papers. This is generally acceptable if it accurately represents the source material, but it will likely impact OCR performance
	Organics: watermark or imprint (acceptable)	Broad: Image or pattern showing through page content Narrow: Imprint showing	Broad: Feature of original item (not a defect) Narrow: Feature of original item (not a defect)	Backing the page with a dark color may reduce the impact of the watermark, especially for translucent papers. This is generally acceptable if it accurately represents the source material, but it will likely impact OCR performance
Examples	Descriptions	Appearances	Causes	Remedies
	Readability: focus (acceptable)	Broad: Blurry or soft focus image Narrow: Image is not in-focus	Broad: Feature of original item (not a defect) Narrow: Feature of original item (not a defect)	This is generally acceptable if it accurately represents the source material
	Readability: focus (acceptable,	Broad: Blurry or soft-looking image when viewed in browser, but sharp-looking when viewed with editing program	Broad: Software error Narrow: File browser software does	Review image files using reliable software tools such as Adobe Photoshop,

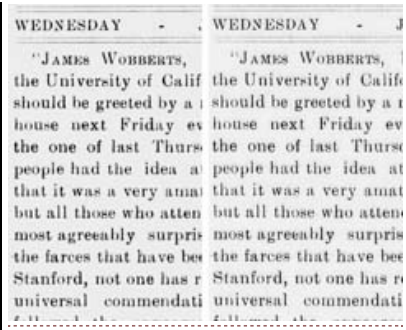



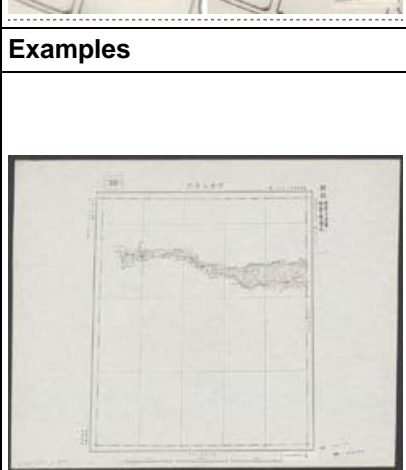






	unacceptable)	Narrow: Image is in-focus, but browser software displays them as blurry	not faithfully display the image files	Irfanview, Adobe Photoshop Lightroom, etc.
	Readability: focus (acceptable, unacceptable)	Broad: Blurry or soft focus image when viewed with several reliable programs Narrow: Image is not in-focus	Broad: Not software error - source materials were photographed slightly out-of-focus Narrow: Software reliably displays image files	If images do not pass with judicious sharpening, adjust camera focus and remake
	Readability: focus (acceptable, unacceptable)	Broad: Blurry or soft focus image when viewed with several reliable programs Narrow: Image is not in-focus	Broad: Not software error - source materials were photographed slightly out-of-focus Narrow: Software reliably displays image files	If images do not pass with judicious sharpening, adjust camera focus and remake
	Readability: focus (acceptable, unacceptable)	Broad: Blurry or soft focus image when viewed with several reliable programs Narrow: Image is not in-focus	Broad: Not software error - source materials were photographed slightly out-of-focus Narrow: Software reliably displays image files	If images do not pass with judicious sharpening, adjust camera focus and remake
Examples	Descriptions	Appearances	Causes	Remedies
	Readability: focus (unacceptable)	Broad: Blurry or soft focus image. Film grain appears soft Narrow: Image is not in-focus	Broad: Imaging setup defect Narrow: Camera or scanner is out-of-focus	Adjust camera focus or repair scanner and remake
	Readability: focus (unacceptable)	Broad: Blurry or soft focus image. Film grain appears soft Narrow: Image is	Broad: Imaging setup defect Narrow: Camera or	Adjust camera focus or repair scanner and




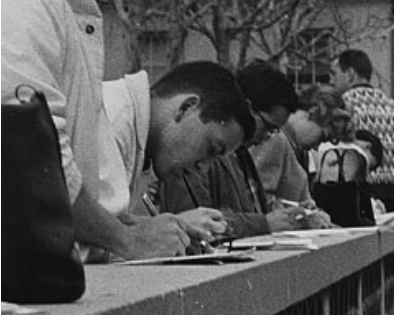



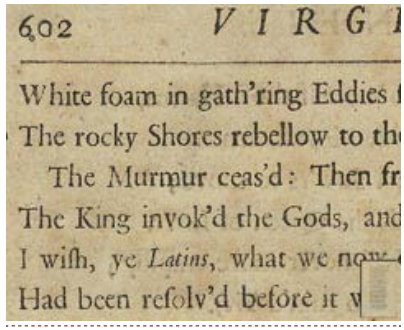

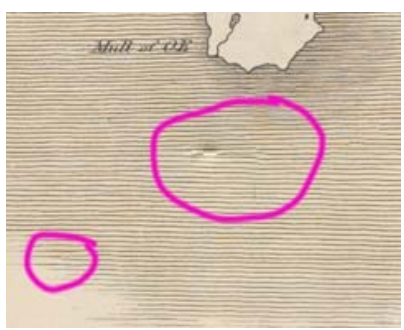


		not in-focus	scanner is out-of-focus	remake
	Readability: focus (marginally acceptable)	Broad: Blurry or soft focus image. Film grain appears soft Narrow: Image is not in-focus	Broad: Imaging setup defect Narrow: Camera or scanner is out-of-focus	If images do not pass with judicious sharpening, adjust camera focus and remake
	Readability: focus (unacceptable, acceptable)	Broad: Blurry or soft focus image Narrow: Image is not in-focus	Broad: Imaging setup defect Narrow: Camera or scanner is out-of-focus	Adjust camera focus or repair scanner and remake
	Readability: focus (unacceptable, acceptable)	Broad: Blurry or soft focus image Narrow: Image is not in-focus	Broad: Imaging setup defect Narrow: Camera or scanner is out-of-focus	Adjust camera focus or repair scanner and remake
Examples	Descriptions	Appearances	Causes	Remedies
	Readability: focus (unacceptable, acceptable)	Broad: Blurry or soft focus image Narrow: Image is not in-focus	Broad: Imaging setup defect Narrow: Camera or scanner is out-of-focus	Adjust camera focus or repair scanner and remake
	Readability: focus for microfilm scans (unacceptable,	Broad: Blurry or soft focus image Narrow: Image is not in-focus	Broad: Imaging setup defect Narrow: Scanner is out-	Adjust camera focus or repair scanner and



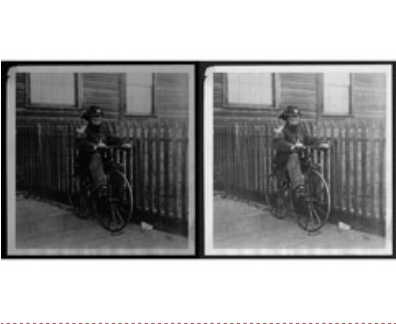

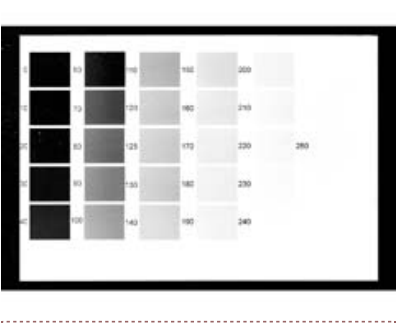
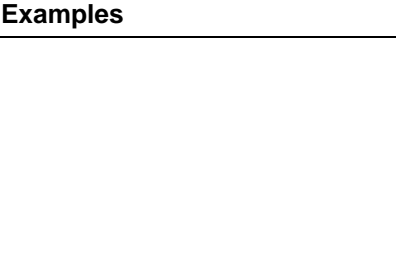


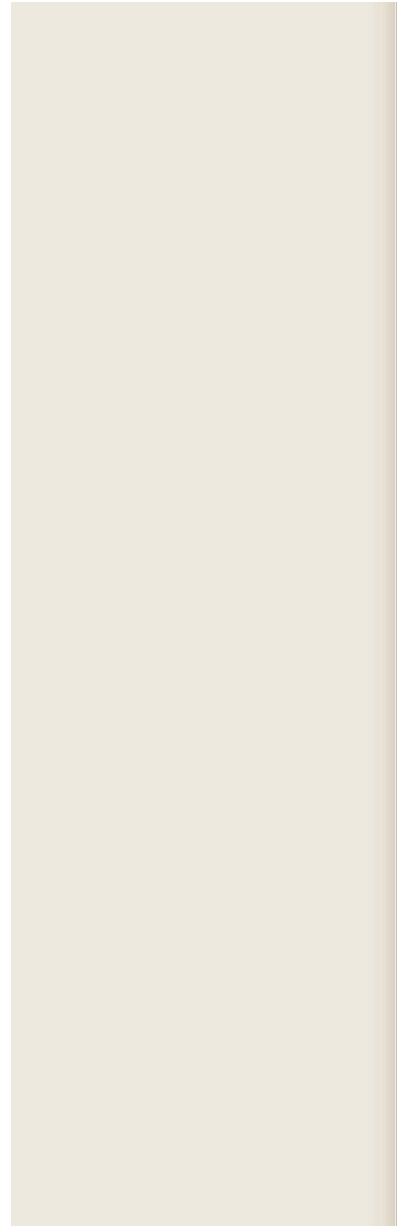
	acceptable)		of-focus	remake
	Readability: insufficient pixels per inch (PPI) (sample frequency) (unacceptable)	Broad: Loss of information Narrow: Fine details appear blurry or are lost (pinstriping in sleeve)	Broad: Imaging setup defect Narrow: Scanner resolution/PPI set too low (2800PPI)	Adjust and remake at higher PPI (4000PPI)
	Readability: insufficient pixels per inch (PPI) (sample frequency) (unacceptable)	Broad: Blurry or soft focus image Narrow: Image is not in-focus	Broad: Imaging setup defect Narrow: Scanner resolution/PPI set too low	Adjust and remake at higher PPI
	Readability: insufficient pixels per inch (PPI) (sample frequency) (unacceptable)	Broad: Blurry or soft focus image Narrow: Image is not in-focus	Broad: Imaging setup defect Narrow: Scanner resolution/PPI set too low	Adjust and remake at higher PPI
Examples	Descriptions	Appearances	Causes	Remedies
	Skew: anamorphosis, lens distortion (unacceptable)	Broad: Image distortion Narrow: Image is rhomboidal or stretched	Broad: Imaging setup defect Narrow: Source materials were not flat or in- plane with the camera. The wide angle lens also adds barrel distortion. These defects will have a significant impact on OCR accuracy	Although software deskew can improve the image, better results often require re- making after adjusting camera configuration
			Broad: Imaging setup	




		Skew: keystoning, lens distortion (unacceptable)	Broad: Image distortion Narrow: Image tapers or narrows at one or more sides	defect Narrow: Source materials were not flat or in-plane with the camera. The wide angle lens also adds barrel distortion. These defects will have a significant impact on OCR accuracy	Change lens and/or reposition camera and source material and remake
		Skew: keystoning, lens distortion (unacceptable)	Broad: Image distortion Narrow: Image tapers or narrows at one or more sides	Broad: Imaging setup defect Narrow: Source materials were not flat or in-plane with the camera. The wide angle lens also adds barrel distortion. These defects will have a significant impact on OCR accuracy	Change lens and/or reposition camera and source material and remake
		Skew: keystoning, lens distortion (unacceptable)	Broad: Image distortion Narrow: Image tapers or narrows at one or more sides	Broad: Imaging setup defect Narrow: Source materials were not flat or in-plane with the camera. The wide angle lens also adds barrel distortion. These defects will have a significant impact on OCR accuracy	Change lens and/or reposition camera and source material and remake
		Skew: scanned microfilm image distortion (unacceptable)	Broad: Image distortion Narrow: Image appears rhomboidal	Broad: Imaging setup defect Narrow: Microfilm scanner speed settings are too high. These defects will have a significant impact on OCR accuracy	Although software de-skew can improve the image, better results often require re-scanning after adjusting scan speed
	Examples	Descriptions	Appearances	Causes	Remedies
			Broad: Content not square with	Broad: Imaging setup defect	Rotate image in editing

	Skew/orientation: page not straight (unacceptable)	image frame Narrow: Content not square with image frame	Narrow: Source materials were not square when imaged	program or remake after repositioning the materials
	Skew/orientation: page not straight (unacceptable)	Broad: Content not square with image frame Narrow: Content not square with image frame	Broad: Imaging setup defect Narrow: Source materials were not square when imaged	Rotate image in editing program or remake after repositioning the materials
	Skew/orientation: page upside down (unacceptable)	Broad: Image appears upside down Narrow: Image in wrong orientation	Broad: Imaging setup defect Narrow: Original imaged in wrong orientation	Rotate image in editing program or remake after repositioning the materials
	Sharpening: over-sharpened (unacceptable)	Broad: Halos and/or exaggerated contrast Narrow: Image artificially over-sharpened	Broad: Imaging system defect Narrow: Raw file processing error or excessive post-processing (unsharp masking)	Adjust processing or editing settings and remake from RAW
	Sharpening: over-sharpened (unacceptable)	Broad: Halos and/or exaggerated contrast Narrow: Image artificially over-sharpened	Broad: Imaging system defect Narrow: Raw file processing error or excessive post-processing (unsharp masking)	Adjust processing or editing settings and remake from RAW
Examples	Descriptions	Appearances	Causes	Remedies
	Sharpening: over-sharpened (unacceptable)	Broad: Halos and/or exaggerated contrast Narrow: Image	Broad: Imaging system defect Narrow: Raw file processing error or excessive	Adjust processing or editing settings and remake from

		artificially over-sharpened	post-processing (unsharp masking)	RAW
	Stitching defects: folds and misalignment in source material (acceptable)	Broad: Defect on a line or a small number of lines Narrow: Misalignment of line or text features	Broad: Feature of original item (not a defect) Narrow: Feature of original item (not a defect)	This is generally acceptable if it accurately represents the source material
	Stitching defects: tile misalignments (unacceptable)	Broad: Defect on a line or a small number of lines Narrow: Misalignment of line, edge, or text features	Broad: Imaging setup defect Narrow: Post-processing error (stitching) caused by photographic distortions or excessive or insufficient tile overlap	Change lens, and/or level sensor, lens, and object planes, and remake tile images with sufficient overlap
	Stitching defects: tile misalignments (unacceptable)	Broad: Defect on a line or a small number of lines Narrow: Misalignment of line, edge, or text features	Broad: Imaging setup defect Narrow: Post-processing error (stitching) caused by photographic distortions or excessive or insufficient tile overlap	Change lens, and/or level sensor, lens, and object planes, and remake tile images with sufficient overlap
	Stitching defects: tile misalignments (unacceptable)	Broad: Defect on a line or a small number of lines Narrow: Misalignment of line, edge, or text features	Broad: Imaging setup defect Narrow: Post-processing error (stitching) caused by photographic distortions or excessive or insufficient tile overlap	Change lens, and/or level sensor, lens, and object planes, and remake tile images with sufficient overlap
Examples	Descriptions	Appearances	Causes	Remedies
	Tonality: too much contrast, channel	Broad: High contrast image; loss of information in dark values	Broad: Imaging setup defect	Diagnose and calibrate the imaging and/or

	clipping (unacceptable, acceptable)	Narrow: Poor tonal mapping and loss of information in low and/or high values	Narrow: Poor lighting or RAW processing	processing system before remaking the image file
	Tonality: too much contrast, channel clipping (unacceptable, acceptable)	Broad: High contrast image; loss of information in dark values Narrow: Poor tonal mapping and loss of information in low and/or high values	Broad: Imaging setup defect Narrow: Poor lighting or RAW processing	Diagnose and calibrate the imaging and/or processing system before remaking the image file
	Tonality: too much contrast, channel clipping (unacceptable, acceptable)	Broad: High contrast image; loss of information in dark values Narrow: Poor tonal mapping and loss of information in low and/or high values	Broad: Imaging setup defect Narrow: Poor lighting or RAW processing	Diagnose and calibrate the imaging and/or processing system before remaking the image file
	Tonality: over-exposure, clipping (unacceptable, acceptable)	Broad: Light image. Faded typography; loss of information in light values Narrow: Image overexposed or incorrectly processed	Broad: Imaging system defect Narrow: Incorrect exposure settings used, raw file processing error or poorly made gain or LCC file	Diagnose and tune the processing system or re-create the gain file before remaking the image file
	Tonality: over-exposure, clipping (unacceptable)	Broad: High contrast image. Faded details and blocked dark tones; loss of information in light values Narrow: Image incorrectly processed	Broad: Imaging system defect Narrow: Incorrect exposure settings used, raw file processing error or poorly made gain or LCC file	Diagnose and tune the processing system or re-create the gain file before remaking the image file
Examples	Descriptions	Appearances	Causes	Remedies
	Tonality: under-exposure, posterization (unacceptable,	Broad: Abrupt changes in or exaggerated color or tonal gradation. Loss of information in light or dark values	Broad: Imaging system defect Narrow: Raw file processing error or poorly	Diagnose and tune the processing system or re-create the gain file



	acceptable)	Narrow: Banding, color or tonal posterization	made gain or LCC file	before remaking the image file
	Tonality: under-exposure, posterization (unacceptable, acceptable)	Broad: Abrupt changes in or exaggerated color or tonal gradation. Loss of information in light or dark values Narrow: Banding, color or tonal posterization	Broad: Imaging system defect Narrow: Raw file processing error or poorly made gain or LCC file	Diagnose and tune the processing system or re-create the gain file before remaking the image file
	Tonality: under-exposure, clipping (unacceptable, acceptable)	Broad: Dark image; loss of information in dark values Narrow: Image underexposed or incorrectly processed	Broad: Imaging system defect Narrow: Incorrect exposure settings used, raw file processing error or poorly made gain or LCC file	Diagnose and tune the processing system or re-create the gain file before remaking the image file

[« Back](#)