

SEARCH

Digital Production Services



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Quality Assurance - Image Defects

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".

Sort alphabetically Sort by look Sort by cause

Examples	Descriptions	Appearances	Causes	Remedies
を表現しています。 をままする。 をまま	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
う美元 たった ままま で 美元 大き で 大き	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
MATTER STATE OF THE PROPERTY O	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

NAST NI STREETING & PART STREETING AND ADDRESS OF THE PART STREETING AND A	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 recreate the gain file before remaking the image file
der Graffeschafft beceelppi	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 recreate 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
The second secon	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
Feet in continue on the set 27 tenhes where the grand of the continue on the set 27 tenhes where the grand of the second or the feet and of the second of the second or the feet and the feet feet and the feet and the feet feet feet and the feet feet feet and the feet and the feet feet feet and the feet and the feet feet feet and the feet and	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

Ausgabe vom 20.1.43 92	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
CIR recommends investment policy Calls on Stanford to approve S. Afr By Gaodein Liu Blad water Urging the University to abase, the control of the companion of the light growth of the lig	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
Black & Minor	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
Modeo Las	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

الانبقة وشانهم بالجلة كبير لا سبما هذا الم وكانت له ايام مقامه هنا افعال جيلة مع و وصعاليكهم أُصْلِحَت احوالهم ويُسِّرَت له والله ينفعه بها، ويجازيه الجرا الاوق عليها، يم ما منى به اهل هذه الجريرة ان الرجل را ابنه او على زوجه او تغضب المراة على ابنت المغضوب عليه انقة توديه الى التطارح في الله	(unacceptable)	fringing or color channel offset	or processing error	
magnas magnanimo, vidrafe vidrafois a vidrafoi	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
eing deflected ### City and is all To survivor of HIV. ### Q-/ICTION RCE BOOK bruary 2nd 9th, 7pm @ STOP AIDS, Join us for some Churro Chocolate! A social ever Cas tro, for Latino boys or right Come kick-it all Lounge and show re	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

Double Drawing Room Sleeping Cars, & Smoking and Library Cars, with be Dining Cars—meals a la carte. Daily To Car Service and Fersonally Conducted Excur every week from San Francisco at 6 p.m. The of everything. R. R. RITCHIE 617 Market St. General Agent Pacifle Palace Hotel SAN FRANCO Or S. P. Co's Agent. RADKE & CO.	(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
Vous étes tellement situés, que vous ponvez étile lien de communication entre les différente parties de l'Europe. Un si beau ciel, tant de monuments, tant de jouissances, des mœurs jad douces, jusqu'à la faiblesse, mais qui désormal seront fortes, franches et généreuses comme l'liberté! Les citoyens de tous les pays voudror encore, comme autrefois, voir la France; ils vou dront s'y arrêter quelques instants, et il ne tiendr désormais qu'à nous qu'ils veuillent s'y fixer san retour. La régie des poudres et salpêtres ne verser rien, mais elle éteindra des dettes, mais elle rem plira ses magasins et nos arsenaux. La caisse d'Poissy ne fait plus guère que rembourser les fond d'avance de ses régisseurs; et dans quelques moi elle vous livrera un établissement dégage de tout dette, un établissement que vons nouver computer.	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
use any or all of the manuscripts submitted. Each contestant will hand in his manuscript, signed with a pseudonym, and accompanied with a sealed envelope containing his real name. Any one person may submit as many poems, stories, and humourous verses as he desires. The contest in all three cases will close January 15, 1901. Special Notices. EASTMAN kodaks and supplies, developing, and printing at Crandall's Cyclery.	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
4 5 6 7 8 9 10 1 M M M	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
etiam prit etiam prit me Pizzi Ime Pizzi I	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
Research dismotion of a School Recharge School Recharge State of Recharge R	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
Colro bel Mexico Mexico Committee Hondura Committee Terra	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
HIJOS DEL SILENCIO HIJOS DEL SIL	Illumination: mixed lighting (unacceptable, acceptable)	Broad: Tonal and color variation in film scan Narrow: Washedout and discolored area (right side)	Broad: Imaging system defect Narrow: Uneven color and tonality caused by multiple light sources or pooly 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

The first of the manager of the secondary to the secondary of the secondary to the secondar	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
TEL ANY & NEIDE MENTANE & STRICE DISTORAL, WE ARE ATTERN ASSESSED. AND THE MENTANE AND THE M	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
THE FARLES OF ESOPE SOPE STATE OF THE PARTY	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
Ave	Moire: Bayer moire (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; moire 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:	

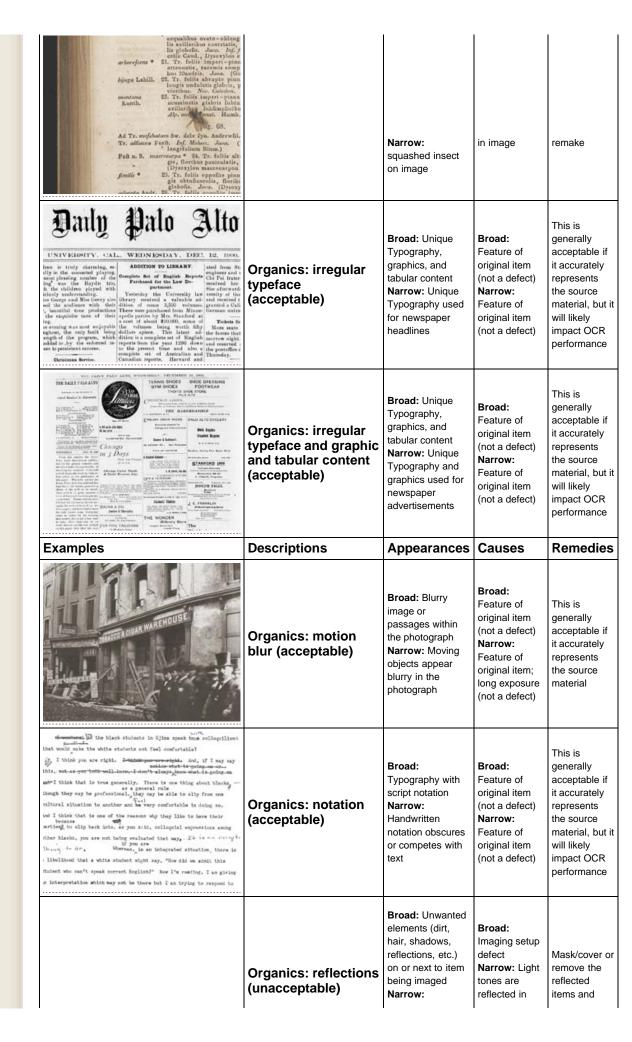
oora dor. pora dor.	Moire: Bayer moire (unacceptable, acceptable)	Broad: Visual texture Narrow: Faint color pattern (original is copperplate engraving)	Artificial pattern of colors appearing in the image; moire caused by the overlay of a patterned image on a pixel-array device's Bayer filter sensor	Remake at different PPI (oversample) or with different technology
1f 2g eticlique	Moire: Bayer moire (unacceptable, acceptable)	Broad: Visual texture Narrow: Faint color pattern in foredge	Broad: Scanning system defect Narrow: Artificial pattern of colors appearing in the image; moire 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
	Moire: Bayer moire (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; moire 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
	Moire: Bayer moire (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; moire 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: Visual texture	Broad: Scan specification artifact Narrow: Artificial	

	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
Thou haft It is imog And took Core Core Core Core Core Core Core Core	Moire: Newton's Rings (unacceptable)	Broad: Visual texture Narrow: Usually a pattern of multicolored, 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
nn general os la que con la constanta de la constanta de la constanta de la comunida de la comunidad de Salvete genérale. La convention par la constanta comunidad de Salvete genérale. La convention par la comunidad de Salvete genérale. La convention par la comunidad de Salvete genérale. La feusième sessive réclame la criation d'une comunission particulière, chargée sacèlus d'une comunission particulière, chargée sacèlus entre comunidate de Salvete genérale. La feusième sessive propose la reaction d'une comunission particulière, chargée sacèlus d'une de soule d'une comunidate particulière, d'activité dus l'Assemblée.) Le départation des citégens ouvriers et suppopé à la labrre (2). La barre (2) capitale de présentation des citégens ouvriers et suppopé à la labrre (2).	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
L'acateur de la députation donne lecture de				material
L'acateur de la députation donne lecture de	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

A Round	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
ingeging ingeging the about the and the are there are and here and here and here and here	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	Organics: dirt on baseboard (unacceptable, acceptable)	Appearances Broad: Unwanted elements (dirt, hair, shadows, reflections, etc.) on or next to item being imaged Narrow: Dirt specks next to item being scanned	Causes Broad: Imaging setup defect Narrow: dirt on baseboard	Remedies Clean and remake
Examples	Organics: dirt on baseboard (unacceptable,	Broad: Unwanted elements (dirt, hair, shadows, reflections, etc.) on or next to item being imaged Narrow: Dirt specks next to item being	Broad: Imaging setup defect Narrow: dirt	Clean and

eventically, wall, there was the blates of the war, World I was in the Wary. As the mid saying gare. "Join the Ma- ser the werld through a porthole." Mell, that was about of it. I saw a to if place I wouldn't have asen befor in Seath America and here and there, so bribe. Jank: Old they draft you into the Mary. Too, or did you j int (leader) Mare you drafted, or did you join the Mary if: No, you well-attered to belong in the Mary. If you drafted, you were in the Army. You didn't have any shot lamb thee sid you go into the Mary! III. I'm darry, I hawn't gut my hearing als with me ind [stringly] er! while DED TOO 66 INTO THE MARY!!!!!! At the Registing of World Mar I. That was what, 15	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
Control of the later of Equations	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
		i	1	ī -
The state of the s	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

Marie Hutton, '21, is the tram manager of women's booker ball, and a resident continued of Chi Omega. dent, Mildred Manerz, '21, is menager of mirer, the women's avinuming trans, and a type. Kappa Alpha Theta. Zarrie Ballinzi, '22, is a member of mirer the crew and freshman swimming '20; teams, and a Phi Beta Phi. Millia Alberta Marry, '21, was sophosnore representative on the Women's Athletic edi-association Board, a member of the raicy varsity swimming trans and of Kappa dident Alpha Theta. Harrie Craltice, '20, is a member of the raicy varsity swimming trans and of Kappa dident Alpha Theta. Harrie Craltice, '20, is a member of the raicy varsity swimming trans and of Kappa dident Alpha Theta. Harrie Craltice, '20, is a member of the raicy varsity swimming trans and of Kappa dident Alpha Theta. Harrie Craltice, '20, is a member of content of the case with the same girl, It is also to a break in the kong-standing custom of licia belowing a new member of Connell as needless.	(acceptable)	Narrow: Faded typography	Narrow: Feature of original item (not a defect)	acceptable if it accurately represents the source material
Dous Vini	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
The second section of the contract of the cont	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	Organics: hair (unacceptable)	Appearances Broad: Unwanted elements (dirt, hair, shadows, reflections, etc.) on or next to item being imaged Narrow: Dust and/or hair on image	Causes Broad: Imaging setup defect Narrow: hair in image	Remedies Clean and remake
SAN ABOTT	Organics: hair	Broad: Unwanted elements (dirt, hair, shadows, reflections, etc.) on or next to item being imaged Narrow: Dust and/or hair on	Broad: Imaging setup defect Narrow: hair	Clean and



		Reflection visible in dark tones of photograph and background	coping glass or glossy materials	remake
Security of the former by the second of the	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 laterial 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
Examples	Organics: scratch (unacceptable)	Appearances Broad: Unwanted elements (dirt, hair, shadows, reflections, etc.) on or next to item being imaged Narrow: Scratch on image	Causes 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
Examples Compared to the control of the control	Organics: scratch	Broad: Unwanted elements (dirt, hair, shadows, reflections, etc.) on or next to item being imaged Narrow: Scratch	Broad: Imaging setup defect Narrow: scratches in coping glass or scanner platen are visible in the	Check the original, then replace the glass and

		stains or residue on film	original item (not a defect)	it accurately represents the source material
Section 1. The section of the sectio	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
ARCHIVES PARLEMENTAREES SECULDARY MANAGEMENT ORGANICA CANAGEMENT AND ARCHIVES AN	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
ALERICA TO	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,

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of the next compe of the next LUN of the set The LUN of the string explain The string explain The string explain The string explain The relative to relative trans	unacceptable)	Narrow: Image is in-focus, but browser software displays them as	not faithfully display the image files	Irfanview, Adobe Photoshop Lightroom,
		blurry	Broad: Not	etc.
is erectusculis, pedanenlis II is islatis, anthofo angulato. Matis, subhidio angulato. Matis, islatis, anthofo angulato. Matis, subhidio angulato. McCini, foliolis oblengis basi attenuatis files, pedanenlis II floris bractestis, de-caragnulato. Nov. Generalis, pedanenlis II floris bractestis, de-caragnulato. Nov. Generalis, pedanenlis II floris bractestis, pedanenlis II floris bractestis, anthonormalis and the control of t	Readability: focus (acceptable, unacceptable)	Broad: Blurry or soft focus image when viewed with several reliable programs Narrow: Image is not in-focus	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
No project can be This project is n support and encou Equally invaluabl Larry Leifer. This project was of our industrial assistance extend thank Dr. Hans Zu project, and for	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
Espace Espace Espace College Golfe de les Marres	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 Compared to the co	Readability: focus (unacceptable, acceptable)	Appearances 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

WEDNESDAY - , WEDNESDAY - J				
"James Wobberts, the University of Calife should be greeted by a rehouse next Friday even house next Friday even the one of last Thurs the one of last Thurs that it was a very amanged but all those who attended the farces that have been stanford, not one has required to the commendation of Calife Stanford, ont one has required to the commendation of Calife Stanford, not one has required to the commendation of Calife Stanford, ont one has required to the commendation of Calife Stanford, ont one has required to the commendation of Calife Stanford, ont one has required to the commendation of Calife Stanford, and the commendation of Calife Stanford on the Cali	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)
tember the Dative according to the properties of the state of the stat	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	

And the second s	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
Section 2000 Secti	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
The Origins of the Electronics Industry on the Public Const The Origins of the Electronics Industry on the Public Const The Origins of the Electronics Industry on the Public Const The Origins of the Electronics Industry on the Public Const The Origins of the Electronics Industry on the Public Const The Origins of the Electronics Industry on the Public Const The Origins of the Electronics Industry on the Public Const The Origins of the Electronics Industry on the Public Const The Origins of the Electronics Industry on the Public Const The Origins of the Electronics Industry on the Public Const The Origins of the Electronics Industry on the Public Const The Origins of the Electronics Industry on the Public Const The Origins of the Electronics Industry on the Public Const The Origins of the Electronics Industry on the Public Const The Origins of the Electronics Industry on the Public Const The Origins of the Electronics Industry on the Public Const The Origins of the Electronics Industry on the	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
The Bully Philo 3lto.	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
THE SALES OF THE S	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

602 VIRGI				
White foam in gath'ring Eddies of The rocky Shores rebellow to the The Murmur ceas'd: Then from The King invok'd the Gods, and I wish, ye Latins, what we now Had been resolv'd before it we		artificially over- sharpened	post- processing (unsharp masking)	RAW
Address of the second of the s	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
NOTA SEA OF THE SEA O	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
Vol. XVII. STAN PORL UNIVERSITY, CAL. MOND STANTORD MARKAGES. A Womber of Weddings of Literature in Guille and Control of the Control of th	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
0 10 10 10 10 10 10 10 10 10 10 10 10 10	Tonality: over- exposure, clipping (unacceptable)	Broad: High contrast image. Faded details and blocked dark tones; loss of information in light values Narrow: Image incorectly 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

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