Yale University Library

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Janet Gertz
Director for Preservation
Columbia University Library
110 Butler Library
New York, NY 10027

Dear Janet:

Thank you for your invitation to Yale University Library to serve as a vendor to convert microfilm frames to digital images and index the images as part of your Text and Image Digital Preservation Demonstration Project. I am pleased to submit the following bid for the digital conversion portion of the project.

I understand that the job entails converting high contrast black-and-white negative microfilm of four volumes of the *New York State Museum Bulletin* dating from 1905 to 1906. The volumes will be filmed "two-up" (two pages per microfilm frame) "cine mode" (text perpendicular to the edge of the microfilm). The volumes total 850 pages plus approximately 40 technical and bibliographic targets, which will also be converted to digital imagery. For purposes of estimating the cost of completing the task, I have used 900 page-images for the entire job. The volumes are heavily illustrated with line drawings and continuous tone illustrations surrounded by text, as well as continuous tone plates and oversize black-and-white plates that stand apart from the text. Additionally, the volumes contain 89 full-color plates, some of which are oversize. These color plates may or may not be included on the black-and-white microfilm.

Yale will convert each page as a separate TIFF image, including all front and back matter, illustrations, and targets that are included on the microfilm. All book material will be converted at 600 dots-per-inch (dpi) and all full-frame targets and fold-outs will be converted at 300 dpi. If multiple microfilm frames exist for a single set of book pages, Yale will select the "best frame" for conversion based upon criteria developed for our ongoing imaging project, Project Open Book. This criteria tends to emphasize text readability over illustration clarity when illustrations and text appear together in a single microfilm frame. Should this criteria not be satisfactory for purposes of your project, Yale will choose the "best frame" from multiple frames to emphasize other characteristics of the original work that Columbia specifies. In any event, Yale will supply one digital image for each microfilmed page of the four volumes.

Yale will utilize digital conversion hardware manufactured by Mekel Engineering, Inc., model number 400XL. The software that controls the scanner is TurboScan ver. 3.0 developed by the Amitech Corporation. Additionally, enhancement filter settings for the scanner are managed with the assistance of Scan Optimizer hardware and software developed by Image Processing Technologies, Inc. and then integrated into the Mekel scanner by the Amitech Corporation. Yale has utilized this hardware and software configuration for over two years in

Project Open Book with very reliable results. Attached is a summary of the hardware and software configuration for Yale's ongoing imaging project.

Yale will supply Columbia with digital files stored in compressed form, using a compression algorithm that conforms fully to CCITT Group 4 standard. Yale will transfer the TIFF image files to Columbia on one of three media:

1) 5-1/2 inch magneto-optical disks (1.3 gb capacity);
2) 4 mm magnetic tapes;
3) 1.44 mb floppy disks.

Columbia will be responsible for supplying the transfer media or for reimbursing Yale for the cost of the transfer media. Depending upon the capabilities of Columbia's computer system, it may also be possible for Yale to transfer the TIFF images to Columbia via anonymous FTP.

Yale will undertake the digital conversion of the microfilmed volumes of the *New York State Museum Bulletin* at the rate of $1.11 per TIFF image created. The cost for converting 900 pages, producing standard TIFF files, and transferring the files to Columbia total approximately $1,000, plus the cost of the transfer medium. This price includes the cost of equipment and labor, administrative support, and overhead charges typically assessed by Yale. Should the job entail converting more than 900 pages, Columbia will be billed at the rate of $1.11.

Yale will complete all conversion, storage, and transfer activities within four weeks of receipt of the preservation microfilm negatives. Yale will inspect and prepare the microfilm for conversion, establish appropriate scanner settings through a sequence of test scans, and transfer TIFF images of these test scans to Columbia on 1.44 mb floppy disks for inspection and approval. Upon approval by Columbia, Yale will convert all microfilm frames to digital imagery in sequence. Throughout the conversion process, project staff at Yale will communicate with Columbia should any problems arise that may compromise the ultimate quality of the end product.

My staff and I look forward to working with you on this project. Please let me know if you need more information about this bid or about Yale's experience in converting preservation microfilm to digital imagery.

Sincerely,

Paul Conway
Head, Preservation Department

Project Open Book Equipment Configuration

- *Processing Station* (3)

  Hardware:

  Compac 486/60, 16 MB memory, 1.05 GB hard drive, 3.5" 1.44 MB floppy disk drive,
  5.25" 1.2 MB floppy disk drive
  Cornerstone Dual Page 120 19" monochrome monitor
  Serial mouse
  Netflex Ethernet interface card
  Xionics Turbo Graphics accelerator board
  UltraStor SCSI controller board
  Xerox 4030 II laser printer

  Software:

  Microsoft DOS ver. 6.2
  Microsoft Windows ver. 3.1
  Xerox Documents on Demand ver. 2.0c
  Xerox Postscript Integration System software
  Gupta Technologies, Inc. SQLBase ver. 5.0
  Beame & Whiteside TCP/IP communications software ver. 3.0

- *Microfilm Conversion Sub-system* (1)

  Hardware:

  Mekel Engineering 400XL Microfilm Digitizer
  Hewlett Packard LaserJet III

  Software:

  Amitech Turbo Scan ver. 3.0
  IPT Scan Optimizer ver. 6.0

- *Optical Storage Sub-systems*

  Hardware:

  Sony 5.25" Optical Drive
  Hewlet Packard Optical Disk Library (jukebox), Model 20T
  Sony 5.25" 1.3 gb Magneto Optical Disks (EDM-1DA0s)

- *Document Server Sub-system* (1)

  Hardware:

  Sun Sparc Station Model 10
  External 535 mb auxilliary hard drive
  External CD ROM drive
  External 4 mm tape drive

  Software:

  Solaris 1.1.1 Revision B operating system (SunOS 4.1.3)
  MastarMind ver. 2.1 file management system

The following technical manuals document the operation of the hardware and software components of Yale's digital imaging system.

- *Operating Instructions and Maintenance Manual for the Mekel M400XL Microfilm Digitizer*, Manual #5052, 1989. (Mekel Engineering, Inc., Diamond Bar, CA)
- *Amitech Turbo Scan Software, V3.0.* Installation and Operation Manual. (Amitech Corporation, Fairfax, VA)
- *IPT Scan Optimizer, V6.0., 1991.* (Image Processing Technologies, Inc., Vienna, VA)
- *Xerox Documents on Demand, V2.0C*, 1994. XDM/XQM User Guide. (Xerox Corporation, Webster, NY)
- *Beame & Whiteside Software, V3.0c*, 1993. (Beame $ Whiteside Software, Inc., Raleigh, NC)
- *MastarMind Version 2.1 for SUN*, 1994. (QStar Technologies, Rockville, MD)

Project Open Book Document Conversion Worksheet

N# —	Call Number: —	Orbis# —

Bibliographic Information

Title: Bulletin of the New York State Museum

Author: None

Pub. Date: (1965-1906)   No. Vols.: 4

Format: (Book)   Serial   Pam   Newspaper

Film Inspection Data

Film Type: Pos.   (Neg.)   Com.

Orientation: (Cine)   Comic

Contrast: (High)   Low   Brown

Print Type: Thin   (Normal)   Thick

Print Size: Large   Normal   (Small)   Measure:

Condition: (Clean)   (Noisy)   Marginal

Illustrations: (Line-Half-Map-Photo-Chart)-Other.

Density Readings (3): 1.58, 1.63, 1.21

Average Density: 1.47

Last Page Number: 396, 265, 453, and 29

File Management Information

Number of Images Scanned: V1: 446, V2: 332, V3: 336, V4: 62=

Total File Size (megabytes): 87 mB   1,096

Batch File: N# - (?????X??) 112 mB After Deskewed, Total

I:\ Bulletin   Date: 6/14-16

RDO File: Orbis# - (Y???????)

H:\ Bulletin   Date: 6/16

Optical Disk File: Orbis# - (BAT??\Y???????)

K:\ BAT 19\ Bulletin   Date: 7/3

CON File: Orbis# - (webcol??\Name?\Y???????)

F:\   Date:

Project Code Information

Directory Information (Jukebox) - Key Words (??MP??)

K Drive: A\\MP, COLUMBIA

Directory Information (Disk Array) - Key Words (CL: ?)

F Drive: CL:

Conversion (tif - gif) Resolution (dpi):

Scanner Setup

Reduction Ratio: 12, (maps RR 15,16,19,20)	Filters: O	Sens: 30
Optimizer Preset: 1 depending on noise	WinSz: 7x7	Thick: 30
Contrast: 180 Brite: 13,14,15,16	Thr1: 4	Thr2: 2

Processing Steps	Date	Init.	Time (min.)	Comments
1. Inspection	6/14	J.c.	90 MIN.	11 Worksheets double-sided.
2a. Scan Benchmarking	6/14-16	J.c.	5 MIN.	
2b. Scan Setup	6/14-16	J.c.	240 MIN.	66- 35mm Frames (maps, Targets,
2c. Scan Continuous	6/14-16	J.c.	180 MIN.	Line Art, and Charts- RR 15,16,19,20)
2d. TurboScan Quality Control	6/14-16	J.c.	40 MIN.	
3. File Management and Transfer	6/16	J.c.	87 MIN.	
4a. Indexing: Pagination	1/20	JT	245 min	264, 266, 443, 441- on Roman; correct }
4b. Indexing: Structuring	1/20	JT	126 min	p. Moil + 44 Mork art, blank - 83 blank - 116
4c. Indexing: Orbis Cataloging				V4 - 358, 360, 335, 361-not in file ...
5a. Quality Control	6/21	BH	225 min	Text deskewed Thru "Scanfix."
5b. Registration	6/21	BH	2 MIN.	
5c. Move to Optical Disk	7/3	J.c.	170 MIN.	
6a. Copy to Disk Array				
6b. Conversion from tif to gif File				
7. DocuTech Printing				

Technical Notes

☐ (1). No Table of Contents	☐ (10). Cropped Text
✓ (2). No Page Numbers - on some pages.	✓ (11). Latent Images - strong at times
✓ (3). No Page: Insert Blank After Page# 384, etc.	☐ (12). Smudged Text
☐ (4). Splices After Page#	☐ (13). Ink Blotches
✓ (5). Skewed Pages	☐ (14). Mold Patches
✓ (6). Pages Vary in Contrast	✓ (15). Ripped Pages - some corners
✓ (7). Faded Text	☐ (16). Curved Text at Binding
✓ (8). Tight Margins: (Binding)-some All	☐ (17). Blurred Text on Microfilm
✓ (9). Noisy Margins: Top-Bottom-Left-Right-(All)	✓ (18). Inconsistent Margins on Microfilm - constant change.

Other: Some Text Broken-up.

V4 to PG 362 - from bottom - # 20 6m pg 361 but 84-85-86

★ 1,390 MINUTES TOTAL TO COMPLETE

Notes:	Left (even)	Right (odd)	Notes:
	Bulletin Full Frame 80	" Museum ...	
Frame # 1 Page #		Frame # 2 Page #	

Notes:	Left (even)	Right (odd)	Notes:
	Univ....	blank	
Frame # 3 Page #		Frame # 4 Page #	

Notes:	Left (even)	Right (odd)	Notes:
	Photo	-- Museum ...	
Frame # 5 Page #		Frame # 6 Page #	

Notes:	Left (even)	Right (odd)	Notes:
	4	5	
Frame # 7 Page # 4		Frame # 8 Page # 5	

Notes:	Left (even)	Right (odd)	Notes:
	↓	↓	
Frame # Page #		Frame # Page #	

Notes:	Left (even)	Right (odd)	Notes:
	20	21	
Frame # 25 Page # 20		Frame # 26 Page # 21	

Notes:	Left (even)	Right (odd)	Notes:
	L.A.		
Frame # 27 Page #			Frame # 28 Page #
Notes:	22	23	Notes:
Frame # 29 Page # 22			Frame # 30 Page # 23
Notes:	↓	↓	Notes:
Frame # Page #			Frame # Page #
Notes: on microfilm	131	133	Notes: on microfilm
Frame # 139 Page # 131			Frame # 140 Page # 133
Notes:	Percé	135	Notes:
Frame # 141 Page #			Frame # 142 Page # 135
Notes:	Photo		Notes:
Frame # 143 Page #			Frame # 144 Page #