

Technical Writing Samples

excerpts from the manuals written for:

Retail Maintenance System – Back Office
Museum of Modern Art, NY

NBA Jam Extreme
Head and Skin Texture Map Creation
Acclaim Entertainment electronic game publisher

complete manual:

AO Histostat
Tissue Embedding Center
Histology and Diagnostics
Reichert-Jung, Inc./Warner-Lambert, Inc.

complete two-fold brochure:

Ticket Entry System
Museum of Modern Art, NY

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Technical Writing – Manuals: Purpose and Industries

I feel that content is paramount. Content and use dictates the format of information. Information is not useful if it is not accessible. In the field of technical writing, content is the information your client (and their employees and/or customers) need to understand, learn and successfully apply to their field of work.

Included in this document are samples of various styles of technical writing: software, hardware and mechanical operation. The manual excerpts are from larger documents that contain a Table of Contents.

Working closely with the Information Technology department of the Museum of Modern Art (MoMA) in New York City, I created manuals and brochures that were utilized by various museum departments with different levels of computer proficiency. Not only did I write the manuals, I designed the format for all the technical documents, creating an identifiable body of IT documents. I also executed all the image editing.

MoMA's needs ranged from proprietary software documentation to hardware usage and Information Technology SLA specifications. *Retail Maintenance System – The Back Office* is used by MoMA's store employees. For the Visitor Services department, I created a two-fold brochure for their *Ticket Entry System*. All manuals contain a troubleshooting section.

NBA Jam Extreme, Head and Skin Texture Map Creation was written while employed at Acclaim Entertainment, Glen Cove, NY. Acclaim Entertainment was an electronic game publisher with titles (products) for the PC, SONY PlayStation and coin-op arcade platforms. I was the post-production supervisor for various game titles and the lead texture artist for *NBA Jam Extreme*. This manual was authored for computer artists involved with the development of the game, *NBA Jam Extreme*. It was assumed that the artists utilizing this manual would already be familiar with Photoshop.

The map creation manual recorded the production steps and provided tips for the 3D basketball player map component of game development. It was critical to have this manual to lay the foundation for future upgrades after the game was initially released. Prior to *NBA Jam Extreme*, manuals were not written for Acclaim CGI artists. I felt it was vital to record as much information as possible.

With this manual, the artist(s) would not have to redevelop "the wheel." Much time was spent in researching the best software and procedures to produce *NBA Jam Extreme* maps. This process not only produced a first generation PlayStation game but, created one set of maps that translated across platforms, without creating three separate versions for each platform. At that time, no other game or publisher wrapped maps around head wireframes.

The *AO Histostat Tissue Embedding Center* was a unit that enabled medical technicians to embed biological tissue samples in wax. Tissue embedding was a mechanical process that was not automated. Once the tissue was solidly embedded and cooled in blocks of wax, it could be sliced on a microtome for microscopic inspection.

The Diagnostic and Histology subsidiary of Reichert-Jung, Inc.(Warner-Lambert, Inc., parent company), manufactured the embedding center. Offices were in Buffalo, New York. The two-fold, black and white 11"x17" instruction manual (with photos) was shipped world-wide with each AO Histostat.

- Melissa C. Beckman

MoMA Retail Maintenance System

This web-based software is the “Back Office” application for the stores’ cash registers. It enables administrators and managers to maintain the register system. Transactions such as discounts, promotions and shipping charges are entered in this database. Below is an excerpt from the thirty-one page manual. The instructions follow the menu structure functionality and window displays.

System Parameters

Maintain company wide system parameters for: Employees, Department, Members, Item Level, Sales Tax, and Transactions.

EMPLOYEES: Discounts for Employees

- 1) Check box: **Employee off applies on promo price.**
- 2) Enter percentage for **Employee discount on MoMA items.**
- 3) Enter percentage for **Employee discount on Non-MoMA items.**
- 4) Check box, to: **Accept checks from Employees?**
- 5) Press **Save.**

i Check boxes for *Staff Sales*. Lawson discounts are applied to the promotional sale prices.

The screenshot shows a web application window titled "Maintain Company Wide System Parameters". At the top, there is a navigation bar with tabs for "Employees", "Department", "Members", "Item Level", "Sales Tax", and "Transactions". Below the navigation bar, there is a text box with instructions: "Select option from the menu below and change the settings. Click on the Save button to save the system parameters." The main content area contains a list of parameters for the "Employees" tab:

Employee off applies on promo price	:	<input checked="" type="checkbox"/>	Check the box for Yes.
Employee discount on MoMA items	:	<input type="text" value="50.00"/>	%
Employee discount on Non-MoMA items	:	<input type="text" value="40.00"/>	%
Accept checks from Employees?	:	<input checked="" type="checkbox"/>	Check the box for Yes.
Employee Barcode length	:	<input type="text" value="6"/>	

At the bottom right of the window is a "Save" button.

DEPARTMENTS: Sales by Departments

During department complimentary sales, the default selling price is the cost plus handling charges. If you need to setup discounts on retail prices at the department level, use the *Maintain Department Discounts* option.

- 1) Enter the percentage for, **Handling charges applied during comp sale.**
- 2) Enter **Default Comp Sale Account Number.**
- 3) Enter **Default Fund Code.**
- 4) Press **Save.**

i To be applied on items purchased for use by MoMA departments. If items are returned, 10% is retained by the store.

The screenshot shows a web application window titled "Maintain Company Wide System Parameters". At the top, there is a navigation bar with tabs for "Employees", "Department", "Members", "Item Level", "Sales Tax", and "Transactions". Below the navigation bar, there is a text box with instructions: "By default, during department complimentary sale, selling price is Cost price plus handling charges. If you would like to setup discounts on retail price at department level use Maintain Department Discounts option." The main content area contains a list of parameters for the "Department" tab:

Handling charges applied during comp sale	:	<input type="text" value="10.00"/>	% applied on cost.
Default Comp Sale Account number	:	<input type="text" value="76122"/>	
Default Fund Code	:	<input type="text" value="0001"/>	

At the bottom right of the window is a "Save" button.

MEMBERS: Sale Parameters for Members

This sets the defaults for special member sales.

- 1) Enter if appropriate, the percentage for **New member discount on first purchase.**
- 2) Check the YES box if, **Member Off applies on promo price?**
- 3) Enter if applicable, the number of days, **New member's checks are accepted after.**
- 4) **Accept checks from Members?** Leave blank. We do NOT accept checks.
- 5) Press **Save.**

The screenshot shows a web application window titled "Maintain Company Wide System Parameters". At the top, there is a navigation bar with tabs for "Employees", "Department", "Members", "Item Level", "Sales Tax", and "Transactions". Below the navigation bar, there is a text box with instructions: "By default, during department complimentary sale, selling price is Cost price plus handling charges. If you would like to setup discounts on retail price at department level use Maintain Department Discounts option." The main content area contains a list of parameters for the "Members" tab:

New member discount on first purchase	:	<input type="text" value="00"/>	%
Member Off applies on promo price?	:	<input checked="" type="checkbox"/>	Check the box for Yes.
Default Member Shopping Days discount	:	<input type="text" value="20.00"/>	%
New member's checks are accepted after	:	<input type="text" value="0"/>	days
Accept checks from Members?	:	<input checked="" type="checkbox"/>	Check the box for Yes.
Members Barcode length	:	<input type="text" value="13"/>	
Non-Members Barcode length	:	<input type="text" value="10"/>	

At the bottom right of the window is a "Save" button.

etc.

NBA JAM EXTREME

Acclaim Entertainment

Player Reduction Process **256 Colors/SONY PlayStation, Arcade, PC**

Basketball Player Production Description

NBA Jam Extreme is a polygonal game, first released for the arcade, with subsequent SONY PlayStation and PC versions. Throughout the building of the basketball players, artist testing was executed on a SONY PlayStation. This enabled the artist to check head map/wireframe alignment, color balance, skin and head tonal range, matches and seams. The SONY PSX, can store only 5 bits of color information for each RGB color. It has 32 levels at 5 bits per gun.

For this game, separate polygonal heads were made for each player. The wireframe consisted of an average of 226 polygons. Nichimen software on a Silicon Graphics system was used to build the head geometry. When imported to the PC, head geo (geometry or wireframe) TIMs were converted to PMDs. This allowed the head map to be applied to the appropriate geo and view on the PSX console. Each head geo was referenced a cylindrical flat map

The primary, base head and skin maps were initially created in Amazon Paint on the Silicon Graphics platform. The player's faces/heads were based on photo scans supplied by the NBA.

The heads had to be "normalized" before a rough, base map could be created in Amazon Paint. Normalizing means that the face had to be rebuilt, so it's looking straight on. The majority of the players were photographed at angles other than straight on. The face was compressed horizontally, with the nose as the center point. Side facial details were painted in. The map has to be tileable, with the seam at the back of the head. The map is "wrapped" around the wireframe. At the time of this stage of game development, this wrapping technique was not utilized in other games.

Head and skin map TIFs were imported from the SGI to Photoshop on a Mac for retouching and color balancing. A number of the players were illuminated by available court light and filtered studio light, i.e. one team was photographed with a purple side light. That meant there were heavy color shifts in the original photos and therefore, the base maps. It was necessary for the Photoshop artist to find an acceptable "average" skin tone for each person. Though basketball cards were references, they too were inconsistent in tonal values.

A 1.5 Gaussian Blur was applied after retouching. This softened the transitional tonal values and reduced head pixilation. Some players had some customized head geos. File conversions along with size and color reduction was accomplished in Debabelizer 1.6.1 (on a Mac). Files were saved as an uncompressed BMP.

Body motion/moves were based on the full motion capture of basketball player, Juwon Howard. The cableless *BioMechanics Motion Capture Technology* was utilized to record all of Howard's physical actions. 550 polygons composed just the body. When tested on the PSX, four identical players were on the monitor. Each 3D figure executed a different basketball move and could be rotated 360 degrees. Each player sprite was composed of about 880 polygons. All basketball players had the same body wireframes.

Home and away jerseys with team logos, shorts, socks and shoe maps were also created. Jersey numbers were later added to the back of each uniform. Shorts, jersey, socks and shoe maps were created in Amazon Paint. The clothing maps were reduced via Matador Sprite (SGI).

Head Maps

The first texture maps you work on are the head maps. Do all of them first. Import the TIF into Photoshop. Make the necessary modifications before reducing it in Debabelizer. Use multiple player photo references, to create a palette and face suitable for each game sprite. No two basketball cards have the same lighting or angle of view. You are aiming for a color palette average for each person. Scans of the cards could include halo anomalies around highlights and deep shadow areas. Eliminate those anomalies first. These are the color shifts the artist can control. If not, they will influence the palette, i.e. a green halo causes a green shift. They become more noticeable as the sprites are assembled.

The production artist can not control the color shifts caused by the developers' programming to assemble the game for each platform. To decrease unacceptable color shifts on all fronts, first reduce the original head map and test it on the PlayStation. The primary shift will be visible at this point. As there are color shifts each time the file is compressed and converted, check all the heads after each batch reduction. I recommend batching maps with a similar tonal range.

The basketball players have customized head geos/wireframes. Testing the head also enables you to check if the map wraps over the geo properly. The same applies to the arm, leg and hand maps.. If not, tweak the BMP map or the uncompressed TIF in Photoshop by repositioning the nose, eyes and/or mouth. Retouch skin maps if necessary. On the PSX, rotate the sprite and check for light pixel flashing and excessive color contrast. You don't want heavy shadows in any of the maps. They are distracting during game play. Shadows streak or band. Light pixels flash.

Once the head map is complete, you'll utilize its palette to apply to the leg, arm and hand maps. It is the individual player palette that customizes each skin map for every character.

A) PHOTOSHOP

1) Color Correction and Retouching

Open TIF cylinder map in Photoshop. Before correcting color, it is advisable to modify some of the tonal values of each head to simulate even lighting. If the map is highly saturated, decrease color saturation first and then proceed. Highlights and shadows may have to be added to the head. It may be necessary to tone down highlights and shadows, or be eliminated. After airbrushing the face, follow with localized smudging.

To maintain the integrity of the original skin tones, select an area(s) and either increase or decrease brightness and contrast, apply color changes, etc. The goal is to create a map/palette that is slightly flat with a variety of skin tones. The map should not include blown-out highlights and extremely dark shadows that would flash during game play or dark.

Areas to Note

Nose

Usually the shadows flanking the length of one side of the nose has to be toned down and shadows added to the other side of the nose. This is due to the three-quarter view that the basketball player is usually photographed in, with sharp lighting.

Select shadow area – decrease brightness and/or contrast

Highlights – either tone down or add a highlight by painting in

Forehead and Cheeks

There may be flat planes of extreme brightness and/or contrast (due to court lighting) that have to be toned down. In many cases, selecting that area and decreasing brightness is sufficient. You may need to paint in some tonal values.

Jaw Line

A jaw line shadow is necessary to define the edge of the face. But, the shadow should NOT extend from ear to ear. A strong, dark shadow will prevent a decent skin/head seam. Due to the nature of the geos

(wireframes), a continuous shadow from ear to ear would make the head appear as it is just stuck on the body – not an integrated element. To make a less noticeable seam, select color from the neck and/or face adjacent to the demarcation line. Paint over it.

Blend Chin

A highlight should be visible, as this helps define the edge of the face while viewing straight on.

Eyes

Lighten the area between the brow and eye. You may have to lighten the shadows adjacent to the brow of the nose. IF this is not done, it may result in a black eye socket. Pupils should be black. There should be no white pixels in the eye. The whites of eyes should be light tones.

Teeth

No white teeth! This would result in white, flashing pixels. Darken teeth as a solid tone. White also uses valuable color space in a limited palette.

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3) Color Corrections/Balancing

Since the color, lighting and scans of the original photo references are inconsistent, each head will have to be approached differently. Most likely it will be necessary to use a combination of techniques.

If highly saturated:

IMAGE + ADJUST + HUE/SATURATION

Color Shifts:

IMAGE + COLOR BALANCE

Intensity/Brightness/Contrast Modifications:

LEVELS; BRIGHTNESS/CONTRAST

4) Blur

Apply a 1.5 Gaussian Blur. It is best to apply the blur after facial retouching and color corrections. This not only softens the head, but smoothes the facial values. This is especially important if you have to paint in values. The gaussian blur decreases pixelization when the head is reduced. You can continue to retouch and color correct after the initial blurring.

The Head Map in Photoshop

Dennis Rodman Head Map (Chicago Bulls)



Prior to Normalization

Original Cylinder Map

Retouched Map with Blur

Note the removal of the goatee in the final map. Forehead and cheek highlights were decreased. Eyes were centered. Some of the shadows flanking the nose were toned down and eliminated. A little hair texture was added. It is recommended that you complete a number of head maps before proceeding to the next step, *reduction*, in Debabelizer. Production time is reduced by automating the reduction process in Debabelizer. Save head map files in a specified folder.

B) Naming Conventions

It is important to create a logical naming convention for the thousands of texture maps that you'll be creating. Not only does it facilitate the assemblage of all the files for the developers, it enables you, to locate and organize your work. Be consistent with file names. This facilitates production time if you have to tweak a 'finished' map. You're also not wasting time locating the original reference images. A developer may return maps to be reworked at any time.

At this time, limit your BMP file names to eight characters as per the DOS naming convention. When you are updating the game (v.2), check with your developer studio if there's a change in their software and conventions. The 3D artists should upload their wireframes on your PC as PMD files. PMD and BMP head files should have the same name, first initial followed by underscore and the first six letters of the surname, i.e. D_RODMAN

Since each player had a number of maps associated with him, we chose to have each map's file name begin with the player's first initial followed by an underscore and the first three letters of his last name. This also helped to eliminate map confusion when more than one player had the same last name. For example, Dennis Rodman's arm map was D_RODAR.BMP; his leg map was D_RODLE.BMP.

It's easier to setup the directories, copy files and rename on the PC. Heads and geos are in the same directory. Create a separate directory for the complete bodies, including the final head version. Within that directory, create team sub-directories that contain only the head and hand files of each basketball player. The developers use the hand palette to apply to respective geos.

When you're ready to send files to the developers (Sculpture Studio in Utah), compress files by team, PKZIP on the PC. Each team consists of twelve files: six heads and six hands. If you need to revise a map, re-zip a complete team for the developer, unless otherwise requested.

C) DEBABELIZER

1) Head Map Reduction

Open the head in Debabelizer. The head is rescaled and color palette is reduced in this program. The TIF file is saved as a BMP (bitmap). Reducing the number of colors in your map to 256 colors is not the only issue. Other factors to be considered are dither, scale, algorithm methods to use. There are six major functions that are applied to the TIF file before it is saved as a BMP.

2) Head Reduction Script – Follow in this Order

Reduction Threshold 0.000100 + 5-bits + 32 Levels + Method Best Quality

Dither 100% + Background Removal's Color

Scale 25.00W 12.500H + Fit to Size 128W 64H + 67% is missing

Method: SINE + Dither ON

Reduce Colors

Sort Palette + Lo-Hi Brightness

3) Creating the Reduction Script – Execute in this Order

It's only necessary to create and save the script once. It can be applied to subsequent folders.

OPEN Head Map + SCRIPTS + WATCH ME + [select the following from the menu]

PALETTE + OPTIONS + COLOR REDUCTION & REMAPPING + RGB 4096; Reduction 0.00010; BEST QUALITY + Bits per Gun: 5 BITS = 32 LEVELS + OK +

etc.

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AO Histostat Tissue Embedding Center
Reichert-Jung, Inc./Warner-Lambert, Inc.

OPERATING INSTRUCTIONS

(unit photographs are not included in this file)

This section is divided into three sections:

- A. Pre-Embedding Set-Up
 - a. Time-of-Day
 - b. Timer
- B. Infiltration
- C. Embedding

NOTE: Each time the main power switch is turned off, the time-of-day and timer adjustments are canceled and need to be reset when the power is turned on again. Observe "A" for am and "P" for pm on the display.

A. PRE-EMBEDDING SET-UP

TIME-OF-DAY

- 1. Main Power Switch on:
 - a. Green power indicator glows.
 - b. LED display flashes time.
- 2. Press TIME
 - a. Red indicator light glows.
 - b. Permits time adjustment.
- 3. Open Time/Temperature Adjustments' Compartment. Roll time by depressing either FAST or SLOW (3) until correct time-of-day is displayed. Time will roll only when switch is held.
- 4. Time-of-day is set. Depress TIME.
 - a. Red light off.

TIMER

- 1. Press Set
 - a. Red indicator light glows.
 - b. Permits time adjustment.
- 2. Roll time by depressing FAST or SLOW until desired programming time is displayed.
- 3. Programmed time has been attained.
- 4. Press SET
 - a. Display reverts to time-of-day.
- 5. Press ADV
 - a. Adjust for the present day-of-the-week
 - b. Advances the illuminated segment of the LED array. Light denotes the day.
- NOTE:** "M" in line with the bottom segment signifies Monday.
- 6. Select the days the unit is not to be activated by the timer.
 - a. Depress override switches (16) to "ON" for chosen days. Example: The center is off on Saturday and Sunday. Switches #6 and #7 are in the "on" position.
- 7. Select the functions to be timer activated by setting the corresponding switches in TIMER, HCA (11) to the "ON" position.
- 8. Timer programming is completed.

To verify programming:

- 1. Press TIME
- 2. Depress TIMER, FAST
 - a. The pre-selected functions must turn on when programmed time has been reached. The status lights will turn off and the respective indicator lights will glow.
- 3. Reset time-of-day.
- 4. Press TIME to cancel.

NOTE: The timer only turns on the embedding center to turn off controls. Depress switches a second time. Indicator lights will go out. When turning off a timer activated control at the end of the day, its corresponding HCA status light will glow. The function will still be timer controlled.

CAUTION: PARAFFIN IS A FLAMMABLE MATERIAL. HANDLE WITH DISCRETION.

B. Infiltration

1. Attach vacuum source (30 inches Hg maximum) to the ¼" fitting on the back of the cover. Vacuum line on/off control is not supplied.
2. Open the cover and fill the pan to approximately ¼" above the center web with paraffin pellets. Close the cover.
3. Press AUX
 - a. Indicator light glows.
 - b. There is no obvious change on the LED display if HEAT is on.
 - c. Pan heaters are activated. Melting process begins. Temperature is displayed only while C switch is depressed. **NOTE 1:** If AUX is on, but the HEAT is off, the display will indicate the infiltrator pan temperature. If both HEAT and AUX are on, the reservoir temperature is displayed. Momentary display on infiltrator temperature occurs only while C switch is held depressed. **NOTE 2:** Paraffin melting process must be slow. Do not attempt to accelerate the process with an increase of temperature. Important paraffin properties may be destroyed by excessive heat.
4. When the paraffin is partially or fully melted, adjust the temperature controller, TEMP, AUX (10) in small increments until desired infiltrating temperature is reached and displayed. See Note 1.
5. Molten paraffin level must not be higher than 1/8" above the center web.
6. Load processed cassettes into the pan. Check the flange of the pan and the cover for foreign matter. Wipe clean with solvent if necessary.
7. Close the cover and turn on the external vacuum valve. Apply hand pressure on top of the chamber cover until sealed.
8. Press TIME
 - a. Indicator light glows.
 - b. Time-of-day display.
 - c. Required infiltration time can be monitored on the clock.
9. After infiltration is complete, press TIME to revert display to temperature. Turn off vacuum. Allow two to three seconds for pressure equalization before raising the cover. (Raising the cover with a partial vacuum in the filtration pan can dislodge the gasket seal.) Depress the breaker button on the infiltrator cover.

INFILTRATION IS NOW COMPLETE THE CASSETTES ARE STORED IN PARAFFIN UNTIL EMBEDDING.

10. To turn off the infiltrator pan heater, press AUX.
 - a. Indicator light off.

C. Embedding

1. Time-of-day and timer have been adjusted,
2. Remove Reservoir Cover (E) and fill reservoir (F) with paraffin pellets. Close cover.
3. Press HEAT
 - a. Indicator light glows.
 - b. Temperature C is displayed. Room temperature is indicated when first activated.
 - c. Reservoir heaters are on and the melting process begins. Increasing Reservoir temperature will be displayed.
 - d. 2.5 liters of paraffin takes two to three hours to melt.

NOTE: THE MELTING PROCESS MUST BE SLOW. When the paraffin is partially or fully melted, adjust the reservoir temperature controller, TEMP, HEATER (6) in small increments clock-wise until the desired embedding temperature is reached.

4. Press COOL
 - a. Indicator light glows.
 - b. Refrigeration compressor and fan are activated. A low hum is audible.
 - c. Dispenser nozzle light (P) is on.
 - d. Hot plate (M) is on.

NOTE: Approximately 10 minutes are required to cool the Cold Plate and heat the Hot Plate.
5. Once the paraffin melts, depress the Dispenser Valve Plate (O) to fill the forceps wells (L) with hot paraffin.

CAUTION: Do not attempt to move the valve plate with solidified paraffin the system. The AO Histostat tissue embedding center is now ready for quality and efficient embedding.

6. At the end of the day, turn off the Reservoir, Cold and Hot Plates by pressing the respective switches. **DO NOT TURN OFF THE MAIN POWER OR UNPLUG.**
 - a. Indicator lights are off.
 - b. Programmed switches automatically return to Timer control. Respective HCA lights (12) glow.
 - c. LED display reverts to time-of-day.

MAINTENANCE

Good instrument maintenance is perhaps one of the most important prerequisites for years of trouble-free operation.

General

1. Do not allow the accumulation of paraffin spillage. Remove excess but do not use hard or sharp scrapers, the special coating on the work surfaces may become damaged.
2. Wipe areas clean with a xylene dampened cloth.

Note: Surface coatings on the AO Histostat Embedding Center are xylene resistant. However, prolonged soaking and/or spills should be avoided.

Condenser and Fans

Dust accumulations on the condenser fins and fan will impede air flow and reduce refrigeration capacity. Periodically, depending on environmental conditions:

1. Press COOL on the control panel to turn off fan. Vacuum clean the accessible areas with a soft brush attachment. **DO NOT** brush the condenser fins sideways.

Fuses

WARNING: Disconnect power cable and turn the power switch to the OFF position before fuse replacement.

1. Fuse #1 protects the electrical circuitry (refrigeration excluded). Observe the warning plate. If the first replacement fuse does not correct the malfunction, contact AO Technical Services (Figure #3).
2. Fuse #2 protects the refrigeration compressor. Overloading or frequent cycling of the compressor may cause burnt fuse. Observe warning plate. If the first replacement does not correct the malfunction, contact AO Technical Services (Figure #3).

NOTE: Power interruption disrupts time and timer adjustments. RE-SET!

Lamp Replacement

The automotive type lamp is designed for thousands of hours of continuous operation. If replacement is necessary:

1. Press COOL to turn off.
2. Simultaneously move contacts sideways to disengage the lamp (Figure #4)
3. Install new lamp, observe contact alignment (Figure #5). Use of mirror will be an aid during replacement.

Paraffin Reservoir Filter

Periodic cleaning of the filter is strongly recommended. The filter helps keep paraffin free of unnecessary sediment that may impede paraffin flow.

Allow the paraffin level to drain as low as possible.

1. Remove filter with forceps. Be careful not to damage the screen.*
2. Soak filter in xylene until occlusions are dissolved. Wipe filter dry.
3. Reinsert filter. It must be firmly sealed.*

* Damaged screen can be replaced with 100 mesh stainless steel wire cloth. To replace the damaged screen, remove the split ring from the barrel of the filter assembly.

Vacuum Infiltration Chamber

1. Press AUX to turn heaters off. **WARNING:** Heater plate may be hot!
2. Open locking level before servicing (Figure #6).
3. The top of the heater plate and the external surfaces of the pan must be kept free from paraffin at all times. Remove spills with xylene wetted cloth or paper (Figure #6).
4. Keep temperature sensor and contact area on the pan clean. Improper sensor and pan contact may result in false temperature readout and overheated paraffin (Figure #6).
5. Lock pan in place after reassembling.

Overflow Drawer

1. Empty overflow drawer frequently. **NOTE:** If paraffin is allowed to accumulate in drawer, internal spillage may occur. Solidified paraffin will cause the drawer to adhere to the shroud due to insufficient heat to melt the paraffin.
2. Wipe with xylene wetted cloth or paper:
 - a. The outside of the drawer, the front plate and along the edges.
 - b. Edges of the open compartment.
 - c. Heated drawer platform. **WARNING:** Heater on the ceiling of the compartment may be hot!

EMBEDDING TIPS

1. Use clean molds. Clean molds in xylene, followed by a soap and water wash. Rinse with distilled water. Dry thoroughly.
2. Use AO Release Spray, catalog number 8028, for easy mold release.
3. Do not overheat the preheated molds.
4. Correct temperatures (59C to 62C) for paraffin reservoir, infiltrator, forceps, and hot plate are reached before work commences. Forceps must be **hot!** If not, the specimen will adhere to the tool.
5. Embed tissue rapidly to prevent premature hardening. Hardening also occurs during a slow transfer of tissue from cassette to the mold.

Problems due to hardening:

- a. Paraffin layers separate during sectioning.
- b. Specimen doesn't float properly in Tissue Bath. Tissue falls apart.

If placing more than one specimen in the same mold, be sure to keep all tissues at the same level in the paraffin. It may be necessary to hold them down with the forceps while their positions are fixed.

Best to place one tissue type in a mold, i.e. liver and lung are fine, both tissues are soft. Uterus and lung are not acceptable – tissue types are hard and soft respectively. The various tissues have different cutting properties. In the same mold, the different specimens create sectioning problems.

6. Do not overfill with paraffin. Wax above and on the edges of the cassette will interfere with secure clamping on the microtome. **Do not overheat paraffin!** Important properties of the substance will burn out and will damage the tissue.

Embedding Techniques

After tissue processing, place cassettes in the vacuum infiltration chamber or the tissue processing wax pot on the shelf to the right of the paraffin reservoir.

1. To warm base molds, place on top of the reservoir cover. The cover allows the metal molds to warm.
2. Place a cassette with specimen on hot plate. Remove and discard cassette cover. While working on the tissue, two cassettes can be placed in the cassette well for easy access. The well provides total paraffin coverage of specimens awaiting embedding. It will prevent them from drying out.
3. In one motion, hold base mold under the dispenser and move it horizontally against the lever. Fill with paraffin half-way (below the cassette/embedding ring seating ledge).
4. With HOT forceps, remove specimen from cassette and place at the bottom of the mold. Press lightly and hold with forceps if necessary to keep tissue from floating to the surface. Place mold on the chiller plate for a few seconds to fix specimen in paraffin faster. (**NOTE:** If paraffin begins to harden, a thin skin will form). If the specimen becomes dislodged from its position, re-orient as necessary with forceps. Should repositioning be impossible, place mold in cassette well, melt down and re-embed in a clean mold.
5. Place cassette bottom or embedding ring on top of mold. Fill with paraffin, careful not to overfill. If an overfill occurs, the specimen block is not clean and may prevent secure clamping on the microtome.
6. Place on cold plate for final cooling. Within minutes, the block is totally solid and can be separated from the mold. Fifty molds can be placed on the cold plate.

The specimen is ready for sectioning.

NOTE: Steps 2 to 5 should be completed quickly to prevent separation of paraffin layers. Remember not to allow the drying/hardening of the specimen.

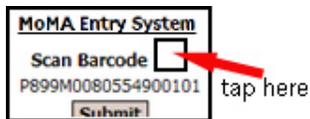
Print Quality Issues

1. Smudged barcode.
2. Text and barcode overlap.
3. A section of the barcode is over a green background; less color contrast.
4. Online ticket was printed on a home printer: paper may be crumpled and ink may be light.

Flashing Cursor

If you don't have a flashing cursor, the barcode cannot be scanned and recorded properly.

- 1) On the screen, tap your finger on the Barcode box.
- 2) A flashing cursor should appear within the box.



TicketWeb Tickets

These narrow, green and white tickets need a slightly different scan technique.

- 1) Scan at a closer distance, less than 8 inches.
- 2) Repeatedly move the scanner vertically along the barcode till it's recorded.
- 3) If the scanner times-out, repeat the above steps. You may try moving a little closer to the ticket and press a yellow trigger button while pointing at the barcode.

MoMA Helpdesk

If rebooting the scanner does not work, give the scanner to your manager and use the spare unit. Your manager will contact the helpdesk for assistance. Report to the helpdesk the scanner's unit number. Looking down at the scanner screen, the number is near the right scanner trigger button.

MoMA Helpdesk: extension 1111

Ticket, Card and Pass Types

Entry rules subject to change.

Entry Type	Good for That Day Only?	Max.# of Guests	Barcode Scanned for Each Guest?	if scan is INVALID, send visitor to:
All Vista Tickets	Y	0	N/A	Information Desk
Member Card (Student - Dual)	N	0	N - Vista ticket needed for guests	Membership Desk
Member Card (Fellow - Benefactor)	N	4	Y	Membership Desk
Ticketweb/Ticketmaster Ticket	Y	0	N/A	Information Desk
High School Student Pass	N	0	N/A	Information Desk
Educator Pass	N	0	N/A	Information Desk
Barcoded Member Guest Pass	Y	0	N/A	Membership Desk
Barcoded Corporate Member Guest Pass	Y	0	N/A	Information Desk
MoMA Annual Complimentary Pass	N	1	Y	Information Desk
MoMA One - Time Admission Pass	Y	0	N/A	Information Desk
Artist Pass	N	0	N/A	Information Desk
Family Pass	Y	5	Y	Information Desk
MoMA Press Pass	N	0	N/A	Information Desk
RockPass	Y	0	N/A	Information Desk
Corporate Card	N	varies	Y	Membership Desk
International Council Card	N	2	Y	Membership Desk
Board of Education Card	N	0	N/A	Membership Desk

MoMA Entry System USER GUIDE



1. Power Button
2. Wireless (WiFi) Indicator
3. Scanner Trigger Buttons
4. Barcode Number and Cursor
5. Scan Verification Result Area
6. Last Visit and Date Display
7. ENTER Button
8. FUNC Button

Scanning tickets properly is vital to MoMA. Not only does the scan verify that the ticket, membership card or pass is valid, it also records valuable information that enables the Museum to make strategic decisions.

Scanner Process

The MoMA Entry System utilizes a wireless Pocket PC laser scanner that scans the barcodes of tickets, passes and membership cards. Via the wireless network connection, barcode data is sent to a web server where it's recorded and checked against information stored on the server.

The scanner emits a beep when the barcode data has been recorded. Within a couple of seconds, the server sends an audio/visual message to the scanner if the ticket is valid. A symbol and sound is associated with each possible result: a green **O** is displayed with a zap sound if valid and a red **X** with a loud buzzer if invalid. A valid ticket, pass or card allows entry to the Museum. Entry is not allowed with an invalid ticket, pass or card.

mes 07/2006

Holding the Scanner

- 1) Hold the scanner in your hand screen up at all times.
- 2) You should be able to easily press a yellow Scanner Trigger Button with one finger.



- ❗ Do **NOT** hold the scanner upside down.
- Do **NOT** hold the scanner vertically.
- Do **NOT** cover the screen with your thumb.
- Do **NOT** scan the barcode sideways.
- You **NEED** to read the screen.

Getting Started

Before you can start scanning, you need to turn on the PocketPC and establish a wireless (WiFi) network connection to the web server. We connect to the server via the Internet.

- 1) Turn on the scanner by pressing the Power Button (red & white button, lower left side).
- 2) Wait for the wireless connection to be active before you start scanning.

i There are two types of status bars displayed at the top of the screen. Below are screens of these bars. Both are correct.

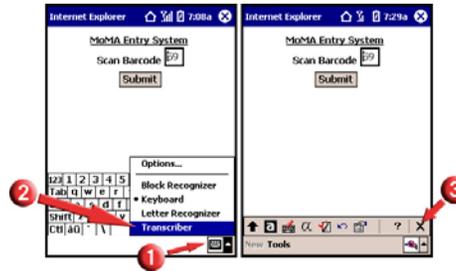


❗ **No WiFi:** an “X” appears with the WiFi icons (vertical bars or two arrows). If you don’t have a connection, you may be in a non-standard area that does not have wireless coverage. Get a new scanner or contact the Helpdesk.

Reducing the Bottom Menu

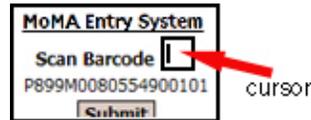
After establishing the wireless connection, reduce the bottom menu to view all information displayed on the screen.

- 1) Click on the **keyboard icon** on the menu – bottom right screen corner. 
- 2) Select **Transcriber** from the dropdown menu. This reduces the menu to 2 lines.
- 3) Then click on the **lower right “X”** to reduce the menu to one line.

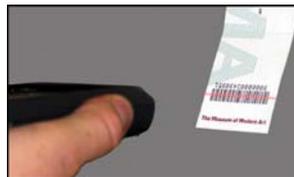


Performing a Scan

- 1) Make sure there’s a flashing cursor in the box adjacent to the Scan Barcode. If there’s no cursor, see the **Troubleshooting** section.



- 2) Hold the scanner 8” – 12” from the barcode.



❗ **The laser must cover the barcode completely. Adjust your scan distance accordingly.**

- 3) Press either yellow **scanner trigger button**. This activates the scan.
- 4) A “BEEP” sounds when the barcode is read. Data is sent to the server.

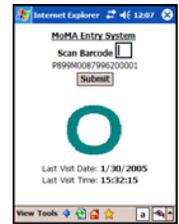
Scan Results

Audio/visual message is sent back to the scanner.

VALID Ticket, Pass or Card

- a. Symbol: **Green “0”**
- b. Sound: **Zap**
- c. Text: **Last Visit Date** and **Last Visit Time**

Entry to MoMA is GOOD

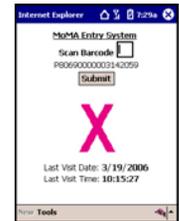


INVALID Ticket or Pass

- a. Symbol: **Red “X”**
- b. Sound: **Loud Buzzer**
- c. Text: **Last Visit Date** and **Last Visit Time**

What to Do ...

- 1) Look at the **Last Visit Date & Time** to check if and when the ticket or pass was previously used.
- 2) Any questions, consult a manager.

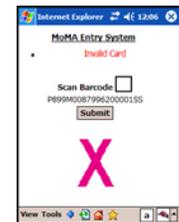


INVALID Membership Card

- a. Symbol: **Red “X”**
- b. Sound: **Loud Buzzer**
- c. Text: **Invalid Card**

What to Do ...

- 1) Check card’s expiration date.
- 2) Or, the card may be the original card from which a duplicate was made. (Upon duplication, original card became invalid.)
- 3) Direct member to the Membership Desk.



Troubleshooting

Invalid Scans

When you get an **invalid result**, scan the ticket, pass or card a second time. It may be valid. Print quality may cause an invalid scan.