Imaging Systems, Inc.

FILM PROCESSING GUIDELINES FOR DENTAL X-RAY SYSTEMS

The quality of the radiograph will be adversely affected by various light and processing factors.   The suggestions below are provided to help identify and correct these potential problems.

THE FILM

The **Clear *Image*™** OGA (like Kodak's TMAT-G) film recommended for use with the latest ISI 400 speed Rare Earth, Dr. Goos® Graduated or Lanex Regular Intensifying Screens is green-light sensitive and as such, is far more light sensitive than both conventional intra-oral and blue-light (RP) sensitive film. In addition, all film exposed to radiation is eight to ten times more sensitive to white light leaks and further radiation than unexposed film.

THE DARKROOM

The darkroom must be 100% LIGHT TIGHT. Apply self-adhesive weatherstripping around ALL door, ceiling and light fixtures emitting white light. Walls may be painted any light pastel color.

THE SAFELIGHT

The filter must be a Type GBX with a 15 watt frosted light bulb or **Imaging Systems' GBX Fluorescent Safelight**. A 6-B, ML-1 or ML-2 filter with a 7.5 or 15 watt bulb is UNACCEPTABLE and will fog (darken) green sensitive extra-oral film. **Imaging Systems'** GBX Fluorescent Safelight is recommended offering over 68% more illumination than the above conventional combinations and is safe for all film. All safelights must be mounted a minimum of 4 feet from the working surface.

MANUAL PROCESSING

Use only Kodak GBX developer and fixer. DO NOT agitate film during development to expedite processing, but do AGITATE PERIODICALLY throughout the day to mix the chemicals. Process as follows:

Temp of Solution	Dev. Time	Rinse	Fix	Final Wash in Water
60°F (15.5C)	8.5 min.	30 sec.	4 min.	20 minutes
65°F (18.5C)	6 "	"	"	"
68°F (20.0C)	***5*** "	"	"	" ***(68° optimum)***
70°F (21.0C)	4.5 "	"	"	"
75°F (24.0C)	3.5 "	"	"	"

Note: The above schedule is for Clear Image™ OGA, Clear Image™ RP, Kodak BB, Ektamat G and Duplicating film only. Add 2 minutes to developing times when using X-OMAT RP. <u>Add 3 minutes to developing times when using any of the T-MAT series film</u>.

MAX. SOLUTION LIFE IS 7 DAYS. YOU MUST REPLENISH 1.5 oz. PER EXTRA-ORAL FILM.

AUTOMATIC PROCESSING

A 5.5 minute dry to dry cycle is mandatory for archival quality when using any of the common "Dental" brand chemistries. *Due to the increased strength of **Imaging Systems' "Medical" AUTOCHEM PREMIXED Chemistry,** your time cycle may be reduced to 4.5 minutes for a further time savings over the "Dental" brands.*

CONFIRM the manufacturer's recommended developer temperature with an accurate thermometer.   (For the Philips 810, XL, Dent-X, Hope and A/T 2000, use 82-83°F (28.3°C). For optimum results, use only **Imaging**

Note: Instructions for changing from Brand X to **IMAGING SYSTEMS' AUTOCHEM PRE-MIXED**
developer and fixer.
      a. COMPLETELY drain and flush out all 3 reservoirs, replenishment bottles and lines
        with hot water.
      b. Soak each transport assembly a minimum of 30 minutes in separate hot water baths.

Caution: The older the processor, the more comprehensive the cleaning procedure must be as the older neoprene rollers have absorbed a greater amount of solution. Just 2cc's of residual solution will contaminate the new chemistry. It is not unusual for the first mix of **AutoChem** or Kodak to be less than ideal particularly in cases where the neoprene has broken down and absorbed greater amounts of developer.

WEEKLY MAINTENANCE

1. **At the start of each work week**, drain the solutions, remove and soak <u>all 3</u> transports in separate **HOT** water baths for 20-30 minutes. Use individually labeled dish pans to prevent cross-contamination.

    a. DO NOT USE ANY CLEANING AGENTS OR DETERGENTS on the transport assemblies. All, including those recommended by the manufacturer, will leave deposits and contaminate the developer solution.

    b. Do not alternate transport assemblies. Never place the fixer transport in the developer section and vice versa.

    c. Do not allow the transport assemblies to dry. This will result in premature destruction of the neoprene.

    d. Remove any crystalline and/or gummy deposits with a fingernail brush or equivalent.

2. Following the 20-30 minute soak in hot water, add fresh solutions **(ALWAYS FILL THE FIXER COMPARTMENT FIRST)**, reinstall the transport assemblies and immediately run a fresh clean-up film (Kodak Roller Transport Clean-up film: 8x10 #114-1530) through to pick up the dislodged debris. Once a clean-up film has been run through 3 or more times, it is nothing more than a piece of mylar and has no further clean-up properties.

3. **The maximum solution life is 7 DAYS WITH REPLENISHMENT**. In systems without automatic replenishment, replenish 1.5 oz. developer and fixer per extra-oral film or periapical equivalency. Record each processed extra-oral film on a calender situated on the darkroom wall. Total each days production, multiply by 1.5 for rates. Drain out the required amount of both developer and fixer (a min. of 10 oz. per day) and bring the fresh developer and fixer up to their recommended levels. For systems with automatic replenishment, merely add to the replenishment bottles each month - discard only if the chemistry has discolored.

4. A radiograph swells a specific percentage as it absorbs developer in a controlled environment. When using a solution other than **AutoChem** and at a cycle of less than 5.5 minutes, a radiograph will absorb excess developer and swell to a dimension that is now too thick to adequately clear the "squeegee" rollers, potentially inducing processor mechanical problems and causing "roller marks".

5. Contrary to many unfounded claims, THE USE OF **IMAGING SYSTEMS' AUTOCHEM PREMIXED** (or any other mfgr's chemistry!) WILL NOT "GUM UP" THE ROLLERS NOR VOID THE MANUFACTURER'S WARRANTY.

6. The above recommendations will assure archival quality processing and results within acceptable exposure guidelines. **In most instances, the above technique will also allow the clinician to reduce their exposure rates 20-30% with a subsequent increase in detail and resolution**.