



The Full Mouth Series: Assessment and Critiquing

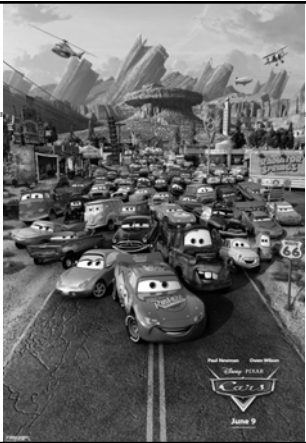
Steven R. Singer, DDS
212.305.5674
srs2@columbia.edu



Assessment and Critiquing?



Full Mouth Series

The Full Mouth Series

- A full mouth series of intraoral radiographs is defined as the radiographs necessary to examine the dentition and supporting structures
- It is usually comprised of approximately 14 periapical and 4 bitewing projections.

The Full Mouth Series

- Local conditions will dictate variations. These include:
 - Fewer teeth
 - Smaller arches
 - Missing contacts
- Regardless of the number of films exposed, one should be able to visualize the entire dentition and supporting structures.

The Full Mouth Series

- A full mouth series might also include a panoramic radiograph in combination with bitewing projections and/or periapical views.



Assessment is a 2-Step Process

- Step 1: Evaluate the films for the need for retakes
- Step 2: Critique the individual films for:
 - a. Deviation from the ideal
 - b. Reasons for the deviation

Assessment of Diagnostic Acceptability



- Does the entire set of radiographs, viewed as a single examination, accomplish the goals of the examination?
- Are all apices, crowns, and contacts clearly visible at least once?
- Can the supporting structures be viewed adequately?

**"You can't always get what you want,
but if you try sometimes, you just
might find, you get what you need."**

Mick Jagger



Criteria for Retakes

- Is the anatomic structure visible on any other view in the series?
- Although less than perfect, is the diagnostic information present in the image?
- Is the information available in a less invasive manner, for example, by clinical examination or vitality test?

Criteria for Retakes

- Can the borders of a lesion and a rim of unaffected surrounding tissue be seen on another view?
- Which view, e.g.: periapical, bitewing, occlusal, or panoramic will accomplish the goal with the lowest possible dose to the patient?

Criteria for Retakes



- Based on the information available, will the retaken film influence diagnosis or treatment plan?

Non-Valid "Reasons" for Retakes



- Administrative films
 - Improved grades
 - Proof of completion of procedures
 - Insurance company "rules" for pre- or post-operative films
 - Duplicate films
- Structure or area of interest is adequately visible on another film in the examination
- A narrative report is adequate

Critiquing a Full Mouth Series

- Knowledge of criteria for each view
 - Area of coverage
 - Adequate coverage of periapical tissues – at least 2mm beyond the apex
 - Contact areas are seen clearly without overlap
 - Alignment of the occlusal plane with film edge
 - Proper contrast and density
 - Minimal geometric distortion
 - Proper processing

Technique Evaluation Form

SDOS Oral & Maxillofacial Radiology Clinic
Technique Evaluation
 Patient: _____ Date: _____ Family: _____

1. Review the table below and check (✓) or X. If appropriate, specify. If not, check the technique which requires repeat exposure on the right.
 2. Check for any additional film quality criteria not on the list below. If appropriate, specify the criteria.
 3. Check for any additional film quality criteria not on the list above. If appropriate, specify the criteria.

Report	Report	Report	Report	Report	Report	Report	Report
Report	Report	Report	Report	Report	Report	Report	Report
Report	Report	Report	Report	Report	Report	Report	Report

MA Missing apices
PO Proximal overlap
ANT Anterior placement of premolar projection
MCan Missing distal of canine on premolar projection
MT Missing third molar region/or tuberosity on molar projection

OC Occlusal plane not aligned
MC Missing Crowns
B Blurred image
CC Collimator cut
Contrast Inappropriate contrast

Dot Embossed dot near apices
TT Tire track pattern
ANC Anterior projection not correctly centered
Fore foreshortened

Elong Elongation
A Artifact (processing)
O Other error, please specify
Density Inappropriate density

Deviations from the Ideal

- **MA** Missing apices
- **PO** Proximal overlap
- **ANT** Anterior placement of premolar projection
- **MCan** Missing distal of canine on premolar projection
- **MT** Missing third molar region/or tuberosity on molar projection
- **OC** Occlusal plane not aligned
- **MC** Missing Crowns
- **B** Blurred image
- **CC** Collimator cut
- **Contrast** Inappropriate contrast

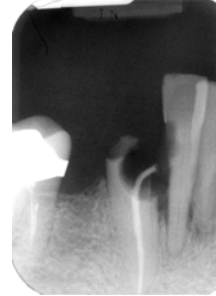
Deviations from the Ideal

- **Dot** Embossed dot near apices
- **TT** Tire track pattern
- **ANC** Anterior projection not correctly centered
- **Fore** foreshortened
- **Elong** Elongation
- **A** Artifact (processing)
- **O** Other error, please specify
- **Density** Inappropriate density

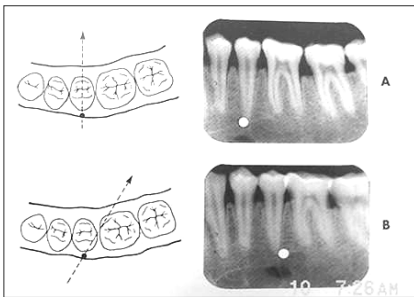
Common Reasons

- **H** Horizontal angulation error
- **V** Vertical angulation error
- **P** Packet placement error
- **CNA** Collimator not aligned
- **Exp** Exposure error
- **Anatomy** Long roots/malposed teeth
- **Proc** Processing error
- **O** Other reason, please specify
- **BB** Bite block not on teeth

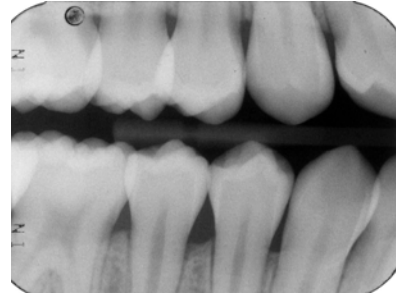
Missing Apices



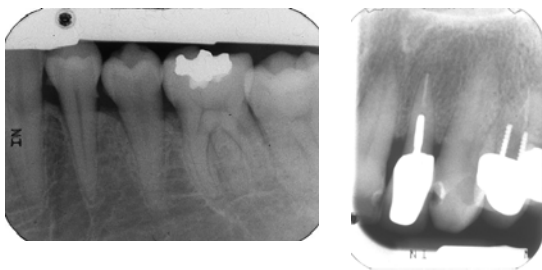
Errors in Horizontal Angulation



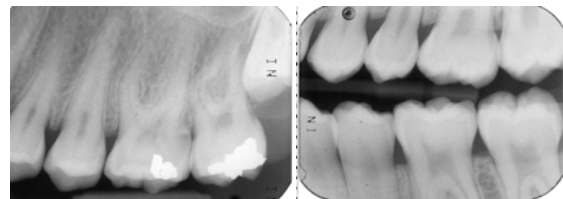
Proximal Overlap



Collimator Cut



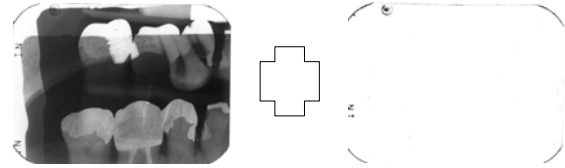
Missing Canine



Double Exposure



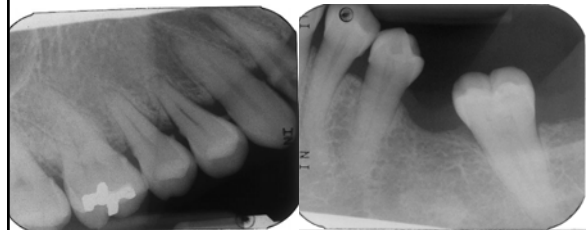
Double Exposure



Missing Tuberosity

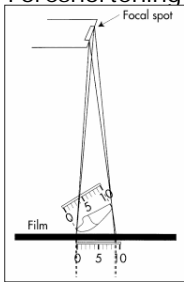


Occlusal Plane Not Aligned

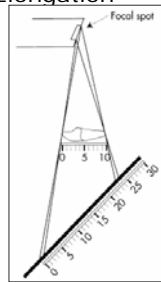


Errors in Vertical Angulation

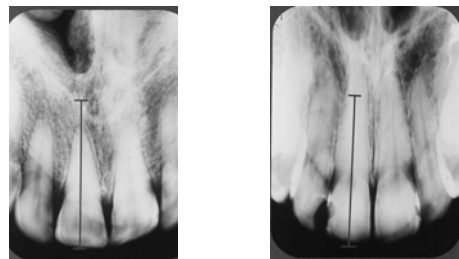
■ Foreshortening



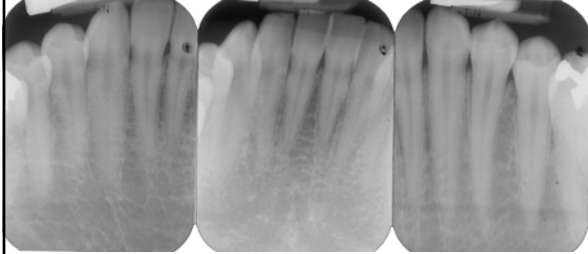
■ Elongation



Errors in Vertical Angulation



Errors in Vertical Angulation



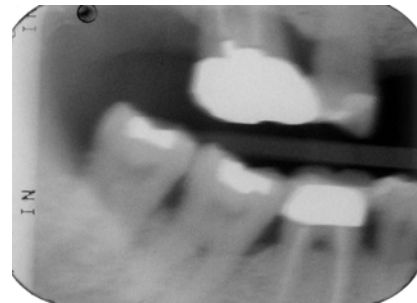
Foreshortening or elongation?



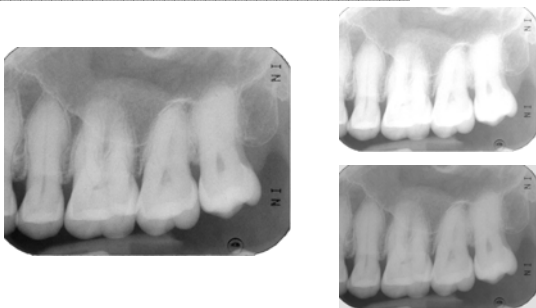
Missing Crowns



Blurred Image



Contrast and Density

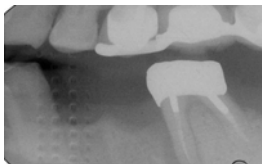


Dot



Tire Track

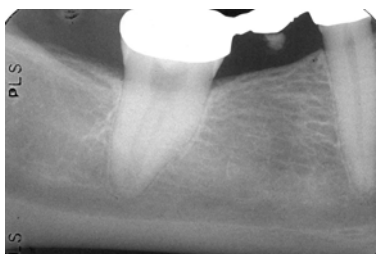
- "Tire track" pattern from reversed film



Vertical Angulation -- Foreshortening



Vertical Angulation Error



Bent Film Artifact



Artifact – Fingernail Marks



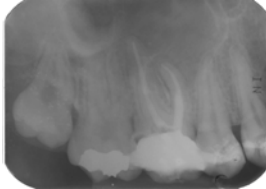
Processing Errors



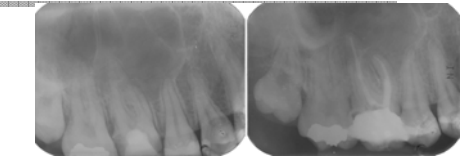
- Washing
 - Incomplete washing will cause brown and yellow spots on films
- Automatic processing
 - Overlapping of films will cause brown lines on films
 - Low fluid levels will cause areas of incomplete processing

Processing Errors

- Radiographs are yellowed due to inadequate fixing and/or washing.



Processing Errors



- Fixer
 - Exhausted fixer causes brown spots on film
 - Too little time in fixer causes brown spots on film
 - Cold fixer causes brown spots on film

Processing Errors



- Light Leaks in the darkroom cause fogging of films
- Light can enter around the door or around ceiling tiles
- Safelights with high-wattage bulbs or improper filters can cause fogging
- Safelights that are too close to films cause fogging

Technique Evaluation Form

SDOS Oral & Maxillofacial Radiology Clinic

Student: _____ Chief: _____ Faculty: _____

Technique Evaluation

1. Review film for adequate penetration and development (D & S) - development is complete. If not, check for radiographs which require repeat exposure in the darkroom.

2. Check for film for sufficient fixer solution and for the preservation of the fixer solution, remove from radiograph.

3. Check for film for sufficient wash and for the preservation of the wash solution for the purpose. This applies to film, hard copy and digital film technology.

Exposure	Exposure	Exposure	Exposure	Exposure	Exposure	Exposure	Exposure
Exposure	Exposure	Exposure	Exposure	Exposure	Exposure	Exposure	Exposure
Exposure	Exposure	Exposure	Exposure	Exposure	Exposure	Exposure	Exposure

Code for Errors

MA	Misleading history	AM	Artificial patient or object	DP	Incorrect film placement
MS	Processing location	AR	Artificial contrast	DF	Die Track pattern
APD	Artificial placement of processor	AL	Artificial lighting	AMC	Artificial manipulation, handling
MCW	Misleading label of cassette or processor	CM	Contaminated cassette	BS	Bleed-through artifact
MS	Misleading label of cassette or processor	DS	Development		
MS	Misleading label of cassette or processor	DS	Development		

Code for Common Errors

U	Unilateral exposure error	CNA	Collimator Not Aligned	PR	Processing error
V	Vertical exposure error	EXP	Exposure error	SR	Step Wedge or scale
P	Partial placement error	LR	Long-throw radiograph	OT	Other reasons, please explain

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