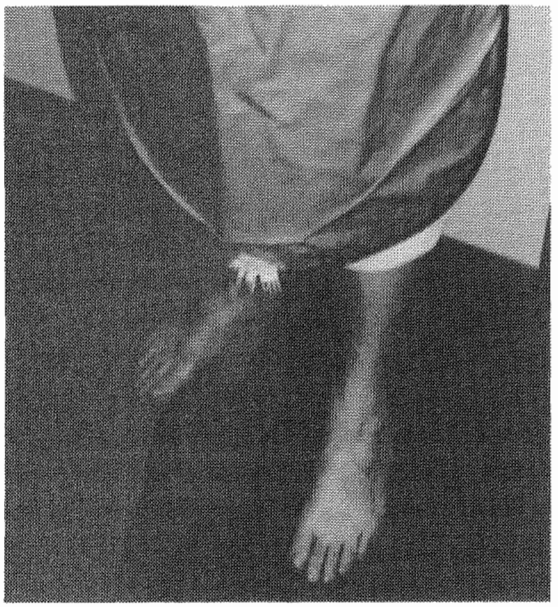
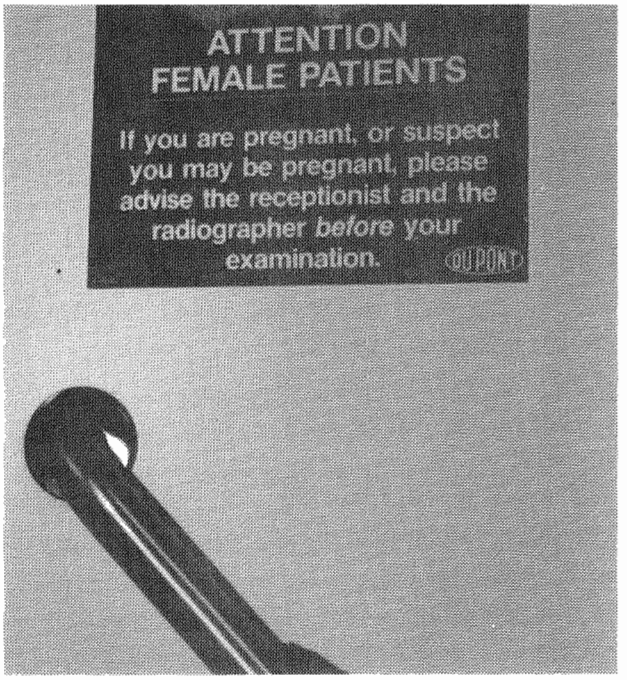
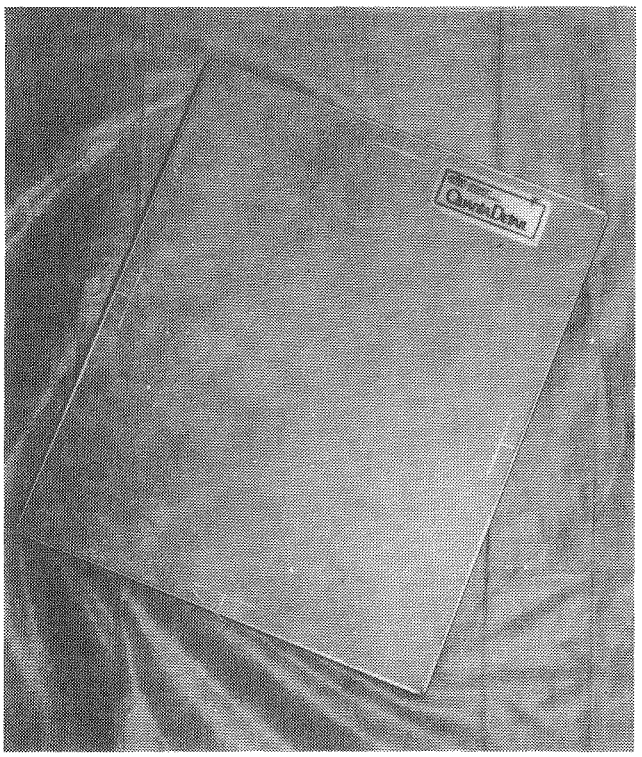
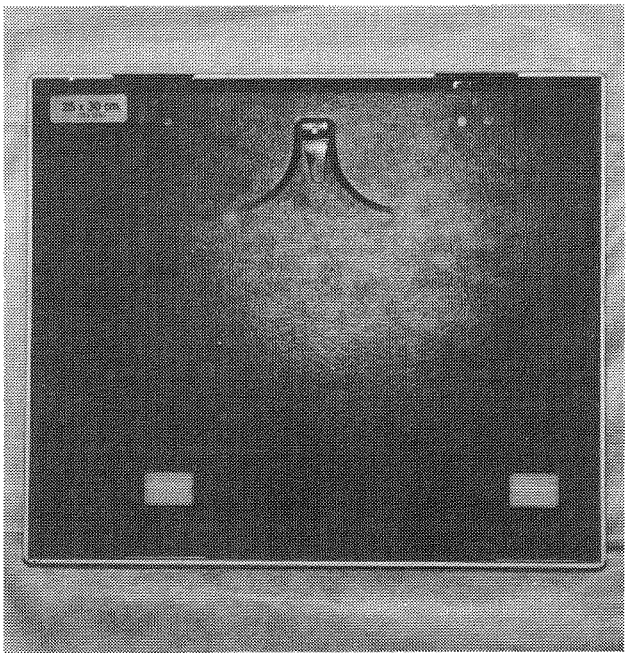




SAFETY NOTES AND SUGGESTIONS

Laws vary in each State, regarding the level of formal training and the use of x-ray equipment. Regulations and inspections regarding safety and environmental hazards on the processing equipment are constantly changing. Consult your local authorities for specific information or questions.
Protect all patients with *a lead apron*, especially pediatrics and adults of child bearing age. Always ask female patients in this age group if there is a possibility that they could be pregnant. If there is a possibility, DO NOT take any x-rays and notify the practitioner.
Never allow a *pregnant woman* to assist in holding a child being radiographed.
Always protect anyone holding or comforting a patient being radiographed, with a lead apron and lead gloves.
X-ray technologists should always stand behind the lead barrier while exposures are being made. Some offices provide a radiation monitor, (Dosimeter badge) that is monitored monthly for radiation exposure.
Always assist and suggest that elderly or trauma patients use handrail for stability, especially when using an orthoposer. A lead apron, particularly the full size style, may alter their balance quickly.
Always set brakes on wheel chair and drape patient with lead apron to protect gonadal area.
To prevent "retakes," briefly scan position of cassette, patient, lead barrier, name plate and marker, tube angle collimation and settings. Check for shadow of fallen pant's leg, lead blocker movement or shadow of crutch prior to exposure.
As you proceed to the x-ray area, talk to the patient and assure them of the very minimal amount of radiation used in Podiatry x-rays. If discomfort is elicited for some projections be quick but not careless with positioning patients. Note the discomfort and projection on patient's chart for the doctor when patient is returned to the treatment room.
Look at trauma patients frequently, carry on a light conversation with them to detect any voice changes. The patient may feel faint.
Keep an ammonia inhalant in the X-ray area as well as an emesis basin and tissues.
Notify the patient when you are ready to push the exposure button and State, "Don't move," so they will concentrate and hold perfectly still.
Thank the patient for their cooperation , assist them from the orthoposer, remove apron and assist them back to the treatment room.
It is recommended that an "x-ray log" stating date, patient's name, age, side, amount of views, amount of film used and doctor's initials. They become part of the end of the month totals, valuable for showing the amount of x-rays taken per month. Notes may be made for possible film needed for lectures, etc. A sample form is included in this manual.





FILM

Proper storage of x-ray film is necessary for good quality radiographs. Minimal amounts of film should be kept on hand.

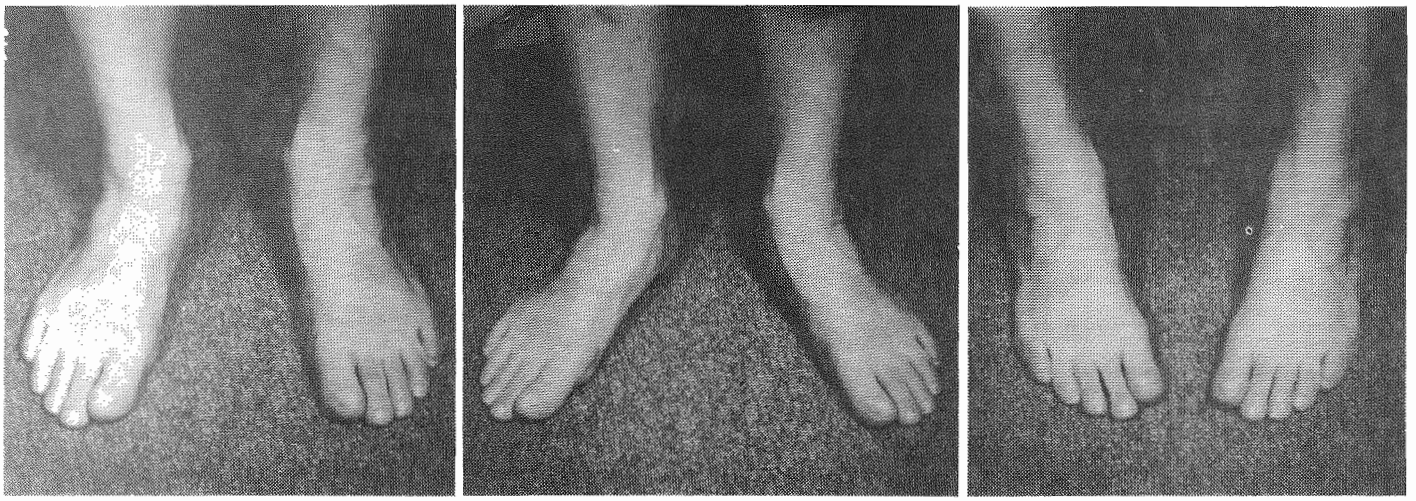
Film must be stored upright in a cool, dry, dark area with low humidity. Average ideal storage temperature is approximately 60° with a humidity factor of 50%.

Film is dated and should be rotated as the supply is replenished. Open only one box at a time. Storage for duplicating film is the same. Caution should be taken to store duplicating film in a different cupboard or shelf to ensure that they won't be used inadvertently.

CASSETTES

Cassettes have a 1/4 inch border of lead on the inside, with film coming to the edge of this border. Position patient's name plate within the 1/4" markings on cassette. Prior to bringing the patient to the x-ray area, set out needed amount of cassettes for views ordered. Be sure that they are kept out of the radiation exposure area.

If possible, place cassettes *"top side"* up prior to exposure and *"bottom side"* up after exposure to prevent using cassette again and creating double exposures.



ANGLE AND BASE OF GAIT

All standard weight bearing radiographs should be taken with patient standing in angle and base of gait. This is very important for accurate biomechanical radiographs. Using this technique, comparison views may be duplicated by each technologist, months or years later. Each foot must be x-rayed separately to take angle and base of gait views.

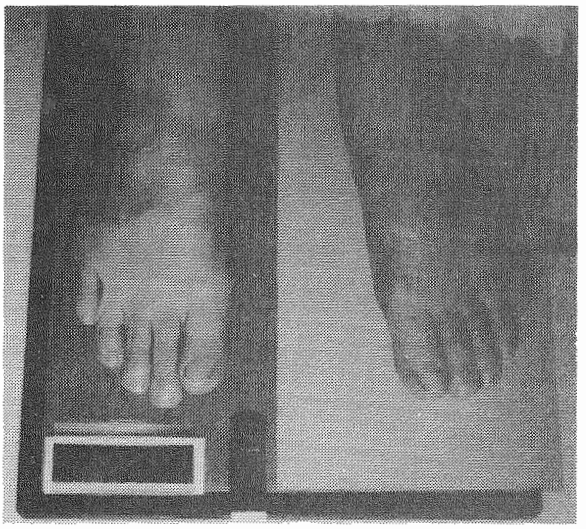
The "angle of gait" is the angle made by each foot in relation to an imaginary line, or mid-line of the body as the patient walks. *Normal gait* is approximately 10 to 15° abducted, (toed out), from line of progression.

The "base of gait" is the distance between each medial malleoli in ambulation, usually 2."

Patients who have an adducted (*toed in*) gait will have a lesser measurement for angle and an increased measurement for base of gait.

Patients with an abducted (*toed out*) gait will have an increase in angle measurement and a decreased measurement in base of gait.

As patient is observed walking, note the angle and base of gait. Position the patient's foot on the cassette as projection dictates, the opposite foot maintaining the angle and base of gait position, with patient standing, pelvis level, not rotated, and equal weight on both feet.



FOOT

DORSOPLANTAR PROJECTION
DP/AP

This view allows study of the phalanges, metatarsals, navicular, cuboid and cuneiforms, the distal portion of the talus, calcaneus and midtarsal joint, Lisfranc's joint, metatarsophalangeal joints and interphalangeal joints.
*For bilateral DP views, always position right foot on right side, left foot on left side of cassette. When taking multiple views of one foot, position DP on side being radiographed with lead blocker on opposite side. After exposure, position lead blocker on exposed side and turn cassette for positioning patient, usually (MO) so that toes are pointing in same direction for easier viewing by practitioner.

Position cassette flat, with lead blocker covering 1/2 of cassette, lengthwise.

Position patient facing x-ray unit, apron on, standing in angle and base of gait. Position foot centrally on exposed cassette. If apron is blocking projection, have patient hold apron against his or her legs.

Position name plate and marker on cassette, usually above 5th digit.
Tube angle 15° from vertical.

Central ray aimed at 2nd metatarsal base.
*One foot should be exposed at a time. If bilateral feet are done simultaneously, beam is directed equally between the feet.

Collimate beam within exposed borders of cassette.
Check settings for mA, kVP and exposure time.
State, "Equal weight on both feet and don't move."

DP PARTIAL WEIGHT BEARING (CRUTCHES)
NON-WEIGHT BEARING (WHEEL CHAIR)
DP/PWB DP/NWB
*This same procedure may be used for patients with crutches, (PWB), or wheel chair, (NWB).

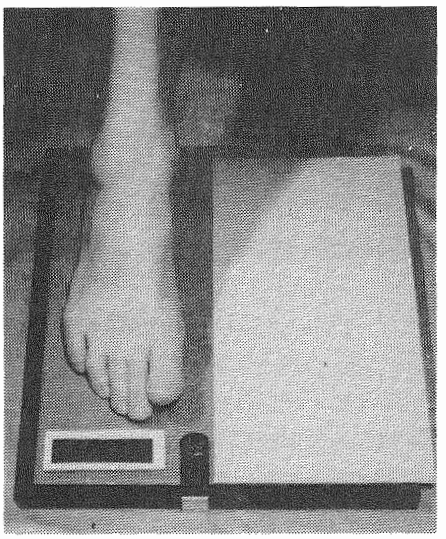
CHANGES/CONSIDERATIONS
Disregard angle and base of gait. Name plate marked PWB or NWB. Check setting changes for edema, dressings, and casts.
Be sure crutches, chair or apron are not blocking projection.

FOOT

DORSOPLANTAR WITH LESION MARKER

*This same procedure may be used after applying a lesion marker. A lesion marker may be made by cutting a small piece from a paper clip. Place on a small strip of scotch tape and place another bit of tape over the metal to secure it to the tape. Apply to lesion and remove after exposure is taken.

CHANGES/CONSIDERATIONS:



Disregard angle and base of gait.
Tube angle is 0° from vertical.
Be sure apron is not blocking projection.

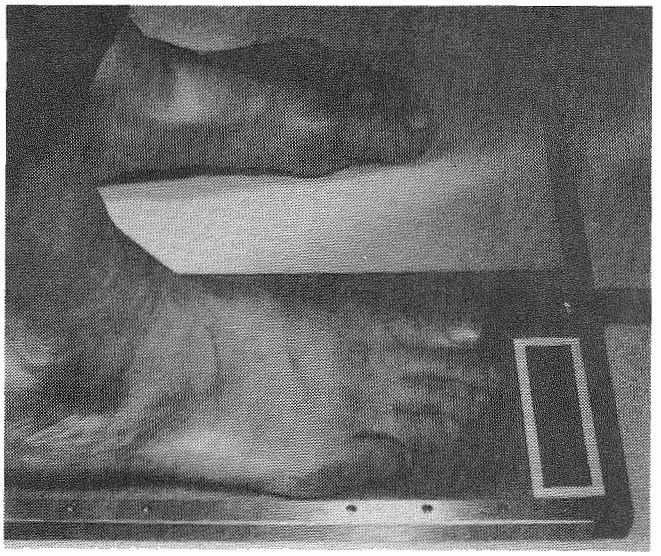
DORSOPLANTAR PROJECTION /NON-WEIGHT BEARING WHEEL CHAIR OR SUPINE

DP/NWB

For patients in supine position, post-operative, etc.

Position cassette flat on orthoposer or table, lead blocker on 1/2 of cassette, lengthwise. Position patient with apron on, draping gonadal area, bend knee and position plantar aspect of foot centrally on exposed cassette.

Position name plate and marker, marked NWB, on cassette, usually above 5th digit.
Tube angle is 0° from vertical.
Central ray aimed at 2nd metatarsal base.
Collimate beam within exposed area of cassette.
Check settings for mA, kVP and exposure time, adjust for edema, dressings and casts.
State, "Don't move."



FOOT

MEDIAL OBLIQUE PROJECTION
MO

This view shows a magnified projection of the calcaneus, cuboid, 3rd, 4th and 5th metatarsals, lateral cuneiform and navicular bones of the foot.

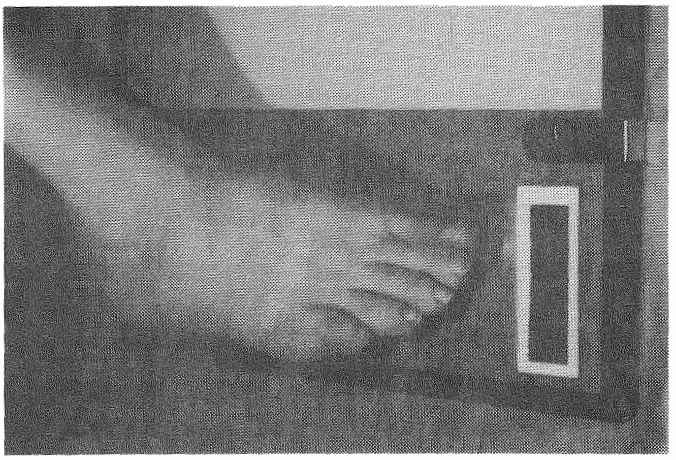
Note: 15° MO for study of the medial cuneiform
30° MO for study of the lateral cuneiform
35° MO for study of the tibial sesamoid
45° MO for study of the cuboid bone
60° MO for study of the cuboid and anterior aspect of the talocalcaneal joint.
Check with your doctor for angle preference.

Position cassette flat with lead blocker covering 1/2 of cassette, lengthwise.
Position patient with apron on, lateral side of foot parallel, within 1/4" of edge of the cassette.
Position name plate and marker on cassette above shadow* of metatarsals.
Tube angle 30° from vertical.
Central ray aimed at the cuboid.
Collimate beam within exposed borders of cassette.
Check settings for mA, kVP and exposure time.
State, "Equal weight on both feet and don't move."
*Note: When collimator is on, the shadow cast by the foot shows where the view will be on the film.

MEDIAL OBLIQUE PARTIAL WEIGHT BEARING (CRUTCHES)

MEDIAL OBLIQUE NON-WEIGHT BEARING (WHEEL CHAIR)
MO/PWB MO/NWB
This procedure may be used for patients on crutches or in a wheel chair with:

CHANGES/CONSIDERATIONS
Mark name plate PWB or NWB.
Check settings changes for edema, dressings and casts.
Be sure crutches or chair are not blocking the view.



FOOT

MEDIAL OBLIQUE PROJECTION NON-WEIGHT BEARING

(WHEEL CHAIR OR SUPINE)

MO/NWB

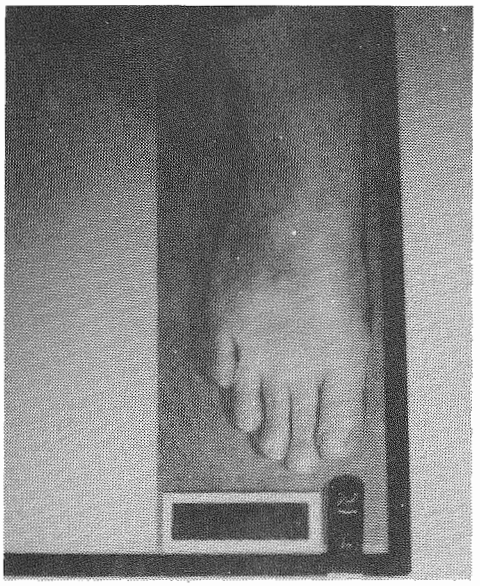
For patients in wheel chair or supine position when no contact is possible or desired on plantar surface of foot.

Position cassette flat on orthoposer or table with 1/2 of cassette covered with lead blocker lengthwise, if possible.

Position patient with apron on draped to protect gonadal area, patient's knee bent with medial side of foot toward cassette. Lateral aspect of foot parallel with edge of cassette, rotate knee medially until plantar surface of foot forms desired angle, 25 to 45°, usually 30° with the film. Check with your doctor for precise angulation, depending on needed study.

Position name plate and marker, marked NWB, on cassette above shadow* of metatarsals.
Tube angle 0° from vertical.
Central ray aimed at 3rd cuneiform.
Collimate beam within exposed borders of cassette.
Check settings for mA, kVP and exposure time, adjust for edema, dressings and casts.
State, "Don't move."

*Note: When collimator is on, the shadow cast by the foot shows where the view will be on the film.



FOOT

LATERAL OBLIQUE PROJECTION

LO

This view shows a study of the medial aspect of the foot, 1st and 2nd metatarsals, 1st and 2nd cuneiform, tibial and fibular sesamoids.

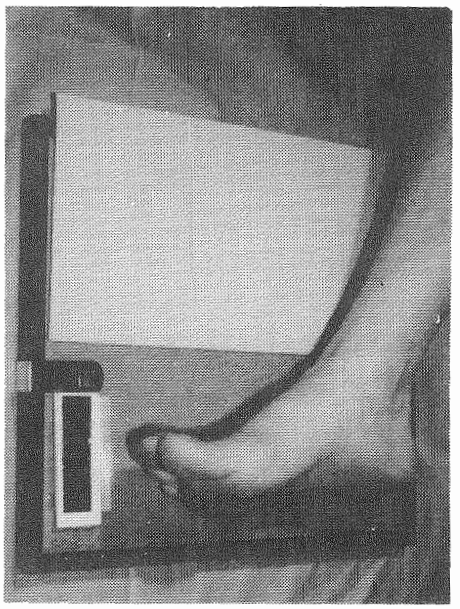
Position cassette flat with lead blocker on 1/2 of cassette, lengthwise.
Position patient with apron on, medial side of patient's foot parallel to edge of cassette, within 1/4" border.
Position name plate and marker on cassette above shadow* of 5th metatarsal.
Tube angle is 30°. Check with your doctor for precise tube angulation, from 15 to 60°, depending on desired study.
Central ray aimed at the navicular.
Collimate beam within exposed borders of cassette.
Check settings for mA, kVP and exposure time.
State, "Equal weight on both feet and don't move."
*Note: When the collimator is on, the shadow of the foot shows where the view will be on the film.

LATERAL OBLIQUE PARTIAL WEIGHT BEARING (CRUTCHES) NON-WEIGHT BEARING (WHEEL CHAIR)

LO/PWB LO/NWB
This procedure may be used for patients on crutches or in wheel chair with:

CHANGES/CONSIDERATIONS

Position patient as close to side of orthoposer as possible and lock wheels of chair.
Drape apron to protect gonadal area.
Mark name plate PWB/NWB.
Check setting changes for edema, dressings and casts.



FOOT

LATERAL OBLIQUE PROJECTION NON-WEIGHT BEARING (WHEELCHAIR OR SUPINE)

LO/NWB

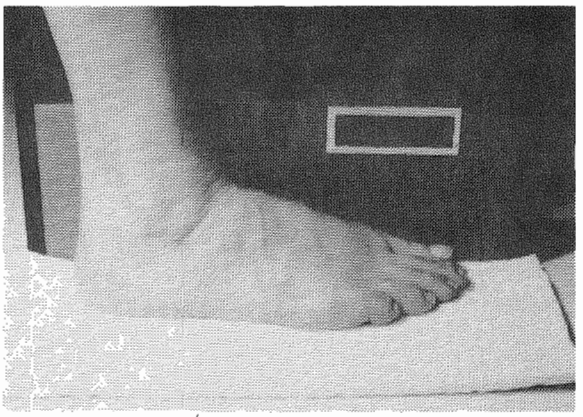
For patients in wheel chair or supine position when no contact is desired or possible on plantar surface of the foot.

Position cassette flat on orthoposer or table. Cover 1/2 with lead blocker, lengthwise.

Position patient with apron on, draped to protect gonadal area. With patient's knee bent, place lateral side of patient's foot on cassette, plantar surface parallel to edge of 1/4" border of cassette. Rotate patient's knee laterally until the plantar surface of the foot is at the 30° angle. Check with your doctor for precise angulation for 15 to 60° depending on necessary study.

Position name plate and marker, mark NWB on cassette above shadow* of metatarsals.
Tube angle 0° from vertical.
Central ray aimed at 1st cuneiform.
Collimate beam within exposed borders of cassette.
Check settings for mA, kVP and exposure time, adjust for edema, dressings and casts.
State, "Don't move."

*Note: When the collimator is on, the shadow of the foot shows where the view will be on the film.



FOOT

LATERAL PROJECTION

LAT

This view shows a study of the medial column of the foot, medial longitudinal arch and ankle joint, calcaneus, cuboid and base of 5th metatarsal.

Position cassette vertically in orthoposer slot, having 1/2 of cassette lengthwise above the slot. Place 1/2" x 6" x 12" felt pad on orthoposer against cassette for a better projection of the plantar surface.

Position patient with apron on, in angle and base of gait. Central plane of foot parallel to cassette, medial side of foot against the cassette, heel slightly away from cassette.

Position name plate and marker on cassette above metatarsals.
Tube angle 90° from vertical.
Central ray aimed at 1st cuneiform.
Collimate beam within exposed borders of cassette, including but not below felt pad.
Check settings for mA, kVP and exposure time.
State, "Equal weight on both feet and don't move."

LATERAL PARTIAL WEIGHT BEARING (CRUTCHES)
NON-WEIGHT BEARING (WHEEL CHAIR)

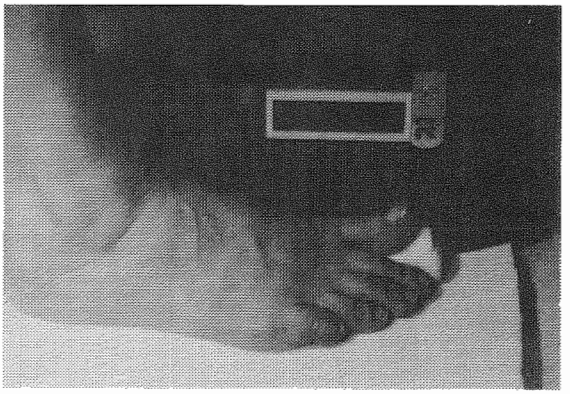
LAT/PWB LAT/NWB

This procedure may be used for patients on crutches or in a wheel chair with:

CHANGES/CONSIDERATIONS:

Position patient on crutches or in wheel chair, facing orthoposer, with apron on and draped to protect gonadal area.

Lock wheels on wheel chair and position patient's foot, with knee bent, on orthoposer Disregard angle and base of gait. Mark name plate PWB or NWB.
Check settings for edema, dressings, casts.
Be sure crutches or apron are not blocking the view.



FOOT

LATERAL RAISED HALLUX

This procedure may be used to study the digits, especially the hallux. (Great toe.)

CHANGES/CONSIDERATIONS

Have patient lift foot slightly and place a "digital roll"* under the hallux.

Check setting changes for lesser digits.

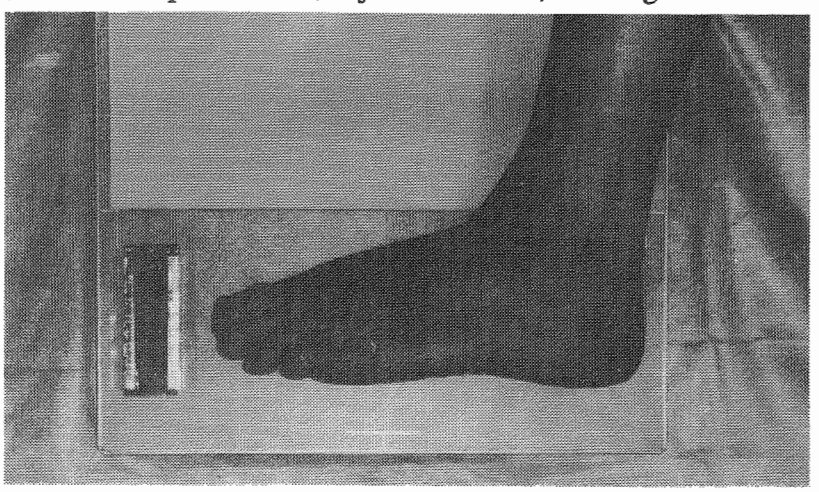
*Use a 3" x 1" x 1/2" piece of felt, or a tightly rolled piece of 2" Kling. Save digital roll in x-ray area for use PRN.

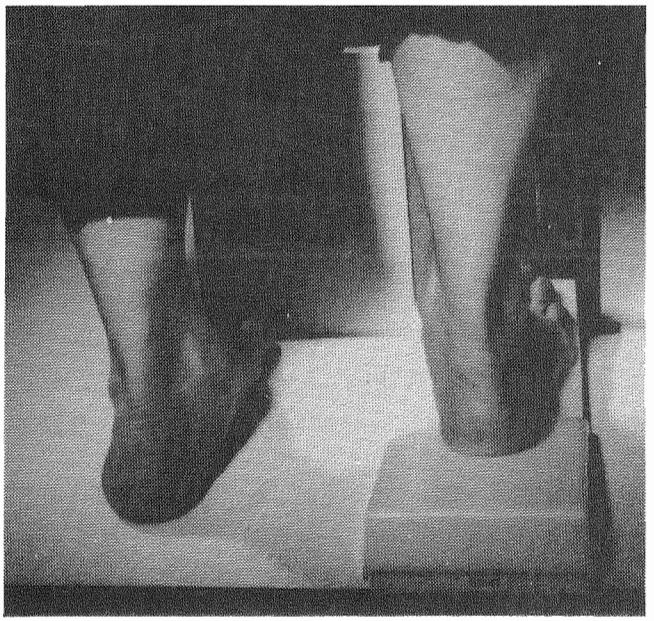
LATERAL PROJECTION NON-WEIGHT BEARING (WHEEL CHAIR OR SUPINE)

LAT/NWB

For patients in wheel chair or supine when no contact is possible or desired on plantar surface of foot.

Position cassette flat on orthoposer or table, use half cassette if possible, blocking 1/2 with lead blocker.
Position patient with apron draped to protect gonadal area, with knee bent, (lying on opposite side if on table) medial side of foot against cassette. Plantar surface of foot vertical to cassette.
Tube angle 0° from vertical.
Central ray aimed at lateral malleolus.
Collimate beam within exposed borders of cassette.
Check settings for mA, kVP and exposure time, adjust for edema, dressings and casts.
State, "Don't move."





FOOT

AXIAL SESAMOID/PLANTAR AXIAL PROJECTION

This view shows the sesamoids and the plantar aspect of the metatarsal heads.

Position cassette lengthwise, vertically in orthoposer slot.

Position patient with back facing x-ray unit, apron protecting their back, and patient holding hand rail. Position ball of foot in groove of foam sponge, (made for this projection), or have patient dorsiflex toes against film and raise heel about 3."

Position name plate and marker on cassette in upper corner within 1/4" border.

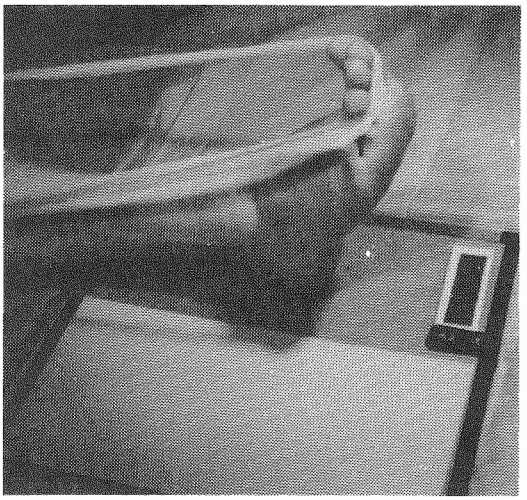
Tube angle is 90° from vertical.

Central ray aimed at 3rd plantar metatarsal.

Collimate beam within exposed borders of cassette.

Check settings for mA, kVP and exposure time, usually increased for better radiograph.

State, and advise patient, "Push on the ball of the foot maintaining heel position on foam and don't move."



FOOT

AXIAL SESAMOID PROJECTION NON-WEIGHT BEARING (NWB)

(HOLLY PROJECTION)
(WHEEL CHAIR/SUPINE)

Position cassette flat on orthoposer or table.

Position patient with apron on, in chair facing orthoposer, leg extended with posterior aspect of heel on cassette, toes pointing upward. Form a sling with 2" Kling gauze under the toes and have patient hold ends of gauze to dorsiflex foot so that plantar aspect forms an angle of approximately 75° with cassette.

Position name plate and marker marked (NWB) on cassette within side border.

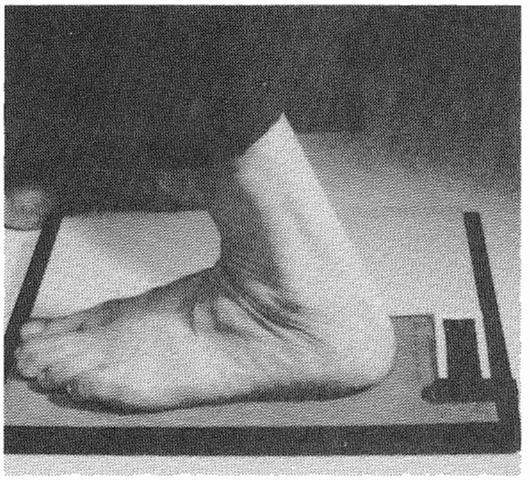
Tube angle 0° from vertical.

Central ray is aimed at 3rd metatarsal head.

Collimate beam within cassette borders.

Check setting changes for mA, kVP and exposure time, usually increased for better radiographs.

State, "Don't move."



FOOT

AXIAL CALCANEAL PROJECTION

AC

This view shows the posterior, medial and lateral borders of the calcaneus.

Position cassette flat on orthoposer. Place lead blocker on 1/2 of cassette lengthwise.

Position patient with back toward x-ray tube and lead apron protecting patient's back. Position patient's heel near center end of exposed cassette. Have patient hold hand rail and flex knee and ankle slightly, keeping heel in contact with cassette.

Position name plate and marker lengthwise near side of cassette by heel.
Tube angle is 45° from vertical.
Central ray aimed at posterior heel at talocalcaneal joint.
Collimate beam within exposed borders of cassette.
Check settings for mA, kVP and exposure time.
State, "Don't move."

AXIAL CALCANEAL PARTIAL WEIGHT BEARING PROJECTION

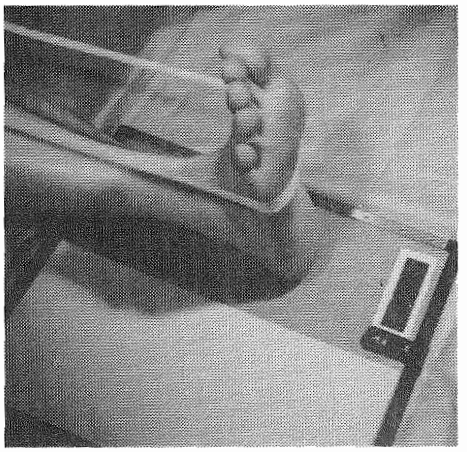
(CRUTCHES)

AC/PWB

This same procedure may be used for patients on crutches. Most of the weight is on the opposite foot and crutches. As much weight as can be tolerated should be on the foot being radiographed.

CHANGES/CONSIDERATIONS:

Name plate should be marked PWB.



FOOT

AXIAL CALCANEAL PROJECTION NON-WEIGHT BEARING

(WHEEL CHAIR OR SUPINE)

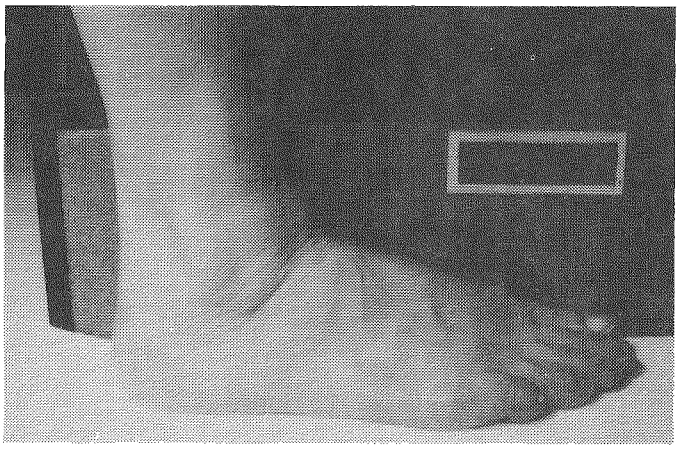
AC/NWB

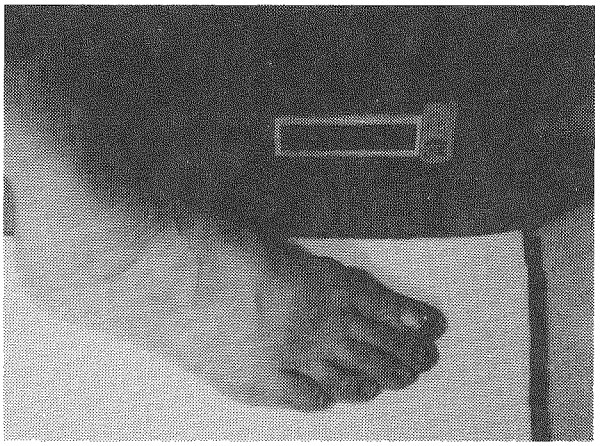
For patients in wheel chair or supine position when no contact is desired or possible on plantar surface of foot.

Position cassette flat on orthoposer or table, with lead blocker covering 1/2 of cassette, lengthwise.

Position patient with apron draped to protect gonadal area, leg extended. Place posterior aspect of heel against cassette. Have patient hold an unrolled 2" Kling to form a sling, with the ball of the foot being held firmly by the sling to position the ankle at a 90° angle, digits pointing toward ceiling.

Position name plate and marker, marked NWB, on cassette edge near heel.
Tube angle is 45° from vertical.
Central ray aimed at center of calcaneus.
Collimate beam within exposed borders of cassette.
Check setting changes for mA, kVP and exposure time, adjust for edema, dressings or casts.
State, "Don't move."





FOOT

HEEL SPUR

(COURTESY OF JOHN CADE, DPM)

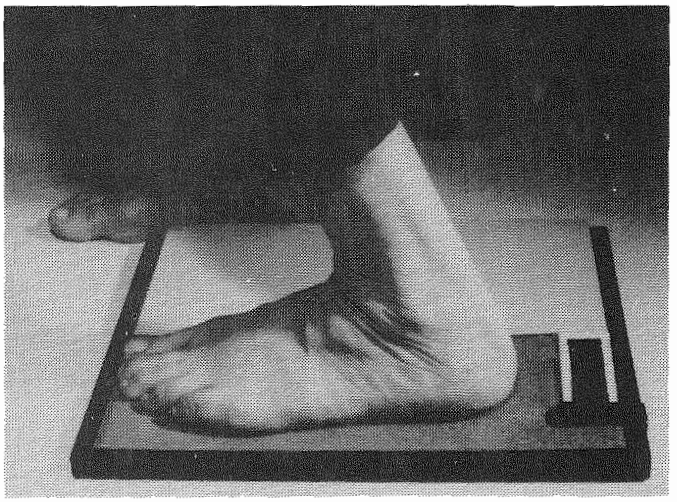
This view gives a better study of the anterior aspect of the calcaneus.

***Used with a standard lateral projection** on the same cassette. Use name plate and marker on this projection to separate easily from angled view. Complete one side on one film if bilateral (B/L) x-rays are ordered.

Position cassette vertically, lengthwise in orthoposer slot. Place 1/2"x6"x12" felt pad on orthoposer against cassette for better plantar projection.

Position patient with apron on, medial side of heel against cassette. Rotate foot externally approximately 15° to get a straight shot of the anterior calcaneus.

Position name plate and marker on cassette above metatarsals.
Tube angle is 90° from vertical.
Central ray aimed at the navicular.
Collimate beam within exposed borders of cassette, including, but not below, felt pad.
Check settings for mA, kVP and exposure time.
State, "Equal weight on both feet and don't move."



FOOT

PUMP BUMP

(Courtesy of Jeffrey C. Christensen, D.P.M.)

PB

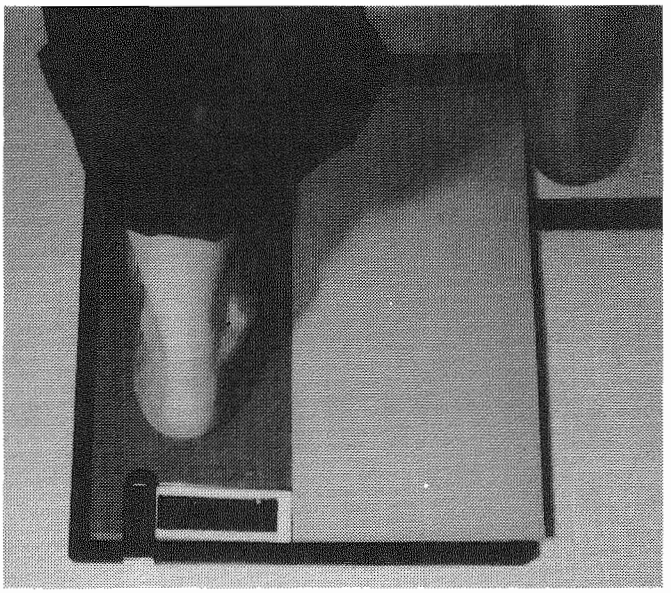
This projection shows an unobstructed view of the posterior calcaneus.

Position cassette flat, with lead blocker on 1/2 of cassette.

Position patient with back toward x-ray unit, apron protecting patient's back. Have patient hold hand rail and position heel near center end of exposed cassette. Have patient tuck buttocks in to allow for tube angle on x-ray unit, place opposite foot forward of cassette. Bending knees slightly, maintaining heel contact with cassette.

Position name plate and marker lengthwise on cassette edge near heel.

Tube angle 0° from vertical.
Central ray aimed at most posterior point of calcaneus.
Collimate beam within exposed borders of cassette.
Check settings for mA, kVP and exposure time.
State, "Don't move."



HARRIS AND BEATH PROJECTION OR SKI JUMP (COALITION VIEW)

This view shows a study of the posterior and middle subtalar facets of the talocalcaneal articulation, the axial view of the calcaneus and the inferior aspect of the talus.

It is suggested that a lateral x-ray be taken prior to taking this projection. The practitioner should dictate the angles needed for the individual study and measure the approximate declination of the posterior facet of the subtalar joint in reference to the weight bearing plane. The middle and posterior facets are NOT always parallel, creating the illusion of a coalition.

Usually, three projections are taken, one at the measured angle and one 10° above and one 10° below. In most cases the initial tube angle is 40°, but it may vary from 35 to 45 degrees.

Position cassette flat on orthoposer, lead blocker on 1/2 of cassette.

Position patient standing on orthoposer, back toward x-ray unit, with apron protecting the patient's back. Position foot on exposed 1/2 of cassette with knees and ankles slightly bent, keeping heel in contact with cassette and holding hand rail.

Position name plate and marker on cassette in proximal lateral edge of exposed cassette.

Tube angle. Varied as directed.

Central ray aimed at talocalcaneal joint from posterior. (Above heel.)

Collimate beam within exposed borders of cassette.

Check settings for mA and kVP and exposure time.

State, "Don't move."

ANKLE PROJECTIONS

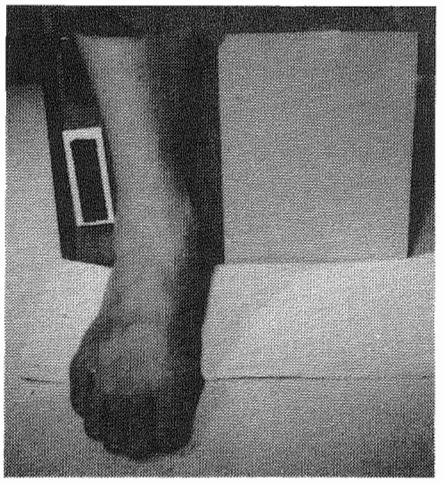
CHANGES/CONSIDERATIONS

All ankle projections are taken with patient using orthoposer or table. All ankle projections should be taken weight bearing, if possible, any exception should be marked on name plate by, i.e. post-operative (P/O), partial or non-weight bearing (PWB or NWB).

Position cassette to allow as much leg study as possible.

For cost containment most ankle projections may be taken on 1/2 of film. For bilateral projections of a comparison study, use one cassette for right side, i.e., anterior/posterior and mortise. Use second cassette to radiograph left side.

Check x-ray setting changes for ankle projections and additional increases for edema, dressings or cast material.



ANKLE

ANTERIOR/POSTERIOR PROJECTION

A/P

This view shows the ankle joint, both malleoli (ankle bones), talar dome and the distal tibia and fibula.

Position cassette crosswise, vertically in orthoposer slot. Cover 1/2 of cassette lengthwise with lead blocker and secure with masking tape. Place 1/2"x 6"x12" felt pad on orthoposer against cassette, lengthwise.

*Note: A/P of right foot on right side of cassette, left on left side.

Position patient with apron on, standing with posterior heel centrally placed on pad against exposed side of cassette. Foot pointed straight ahead, opposite foot behind cassette.

Position name plate and marker on cassette lengthwise within side border.
Tube angle is 90° from vertical.
Central ray is aimed centrally between malleoli, (ankle bones).
Collimate beam within exposed borders of cassette, including, but not below, felt pad.
Check settings for mA, kVP and exposure time.
State, "Equal weight on both feet and don't move."

ANTERIOR/POSTERIOR PARTIAL WEIGHT BEARING (CRUTCHES) NON-WEIGHT BEARING (WHEEL CHAIR)

A/P (PWB) A/P (NWB)

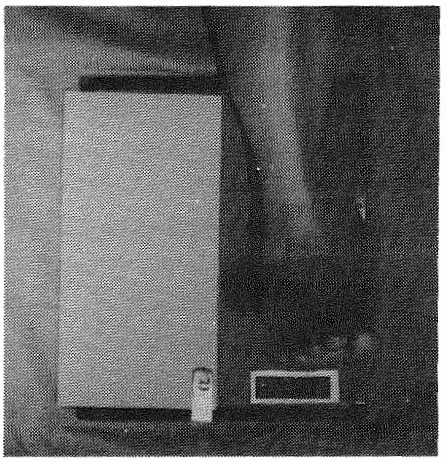
This same procedure may be used for patients on crutches or in wheel chairs with:

CHANGES/CONSIDERATIONS

Position patient as close as possible at end of orthoposer on crutches or in wheel chair, lock wheels. Flex knee to position patient as in previous description.

Drape apron to protect gonadal area.

Mark name plate PWB or NWB. Check setting changes for edema, dressings and casts.



ANKLE

ANTERIOR/POSTERIOR NON-WEIGHT BEARING

(WHEELCHAIR OR SUPINE)

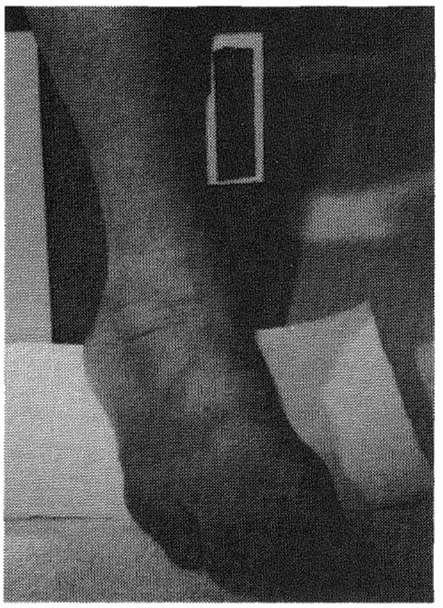
A/P (NWB)

For patients in wheel chair or supine position when no contact is desired or possible on plantar surface of foot.

Position cassette flat on orthoposer or table. Cover 1/2 of cassette lengthwise with lead blocker.

Position patient supine with leg extended, apron draped to protect gonadal area. Position posterior heel on cassette, digits pointing up, dorsiflex foot slightly for better projection of ankle joint.

Position name plate and marker marked (NWB) on cassette within exposed border.
Tube angle 0° from vertical.
Central ray aimed centrally between malleoli, (ankle bones).
Collimate beam within exposed borders of cassette.
Check settings for mA, kVP and exposure time, adjust for edema, dressings and casts.
State, "Don't move."



ANKLE

ANKLE MORTISE PROJECTION

This view shows the mortise of the ankle joint.

Position cassette lengthwise, vertically in orthoposer slot. Cover 1/2 of cassette lengthwise with lead blocker, fasten with masking tape. Place 1/2"x6"x12" felt pad on orthoposer against cassette lengthwise.

Position patient with apron on, standing with posterior heel against cassette. Rotate leg and foot between 5 and 15° internally. Place your index fingers on each ankle bone forming an imaginary line between the two fingers and a parallel line to film.

Position name plate and marker on cassette lengthwise on lateral side of cassette within border.

Tube angle is 90° from vertical.

Central ray aimed at center of ankle joint.

Collimate beam within exposed borders of cassette including, but not below, felt pad.

Check settings for mA, kVP and exposure time.

State, "Equal weight on both feet and don't move."

ANKLE MORTISE PARTIAL WEIGHT BEARING (CRUTCHES) NON-WEIGHT BEARING (WHEEL CHAIR)

PWB NWB

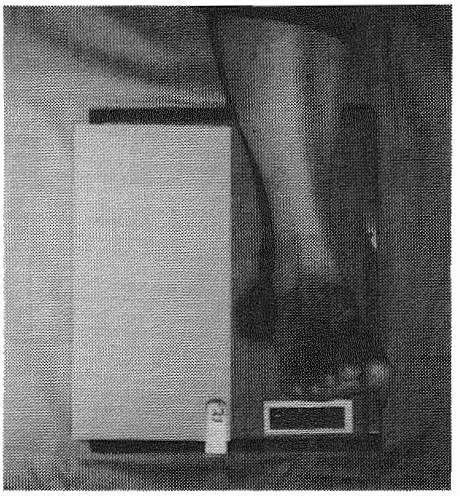
This same procedure may be used for patients on crutches or wheel chair with:

CHANGES/CONSIDERATIONS

Position patient on crutches or wheel chair as close as possible to end of orthoposer. Lock wheels on chair. Drape apron to protect gonadal area. Flex knee to position patient as in previous description.

Mark name plate (PWB) or (NWB).

Check setting changes for edema, dressings and casts.



ANKLE

ANKLE MORTISE NON-WEIGHT BEARING (WHEEL CHAIR OR SUPINE)

For patients in wheel chair or supine position when no contact is desired or possible on plantar surface of foot.

Position cassette flat lengthwise on orthoposer or table. Cover 1/2 of cassette lengthwise with lead blocker.

Position patient supine with apron draped to protect gonadal area, leg extended with posterior leg and heel against cassette. With toes upward, rotate foot and leg internally between 5 and 15° until imaginary line between ankle bones are parallel to cassette.

Mark name plate NWB and place on cassette lengthwise to leg, between leg and cassette border.

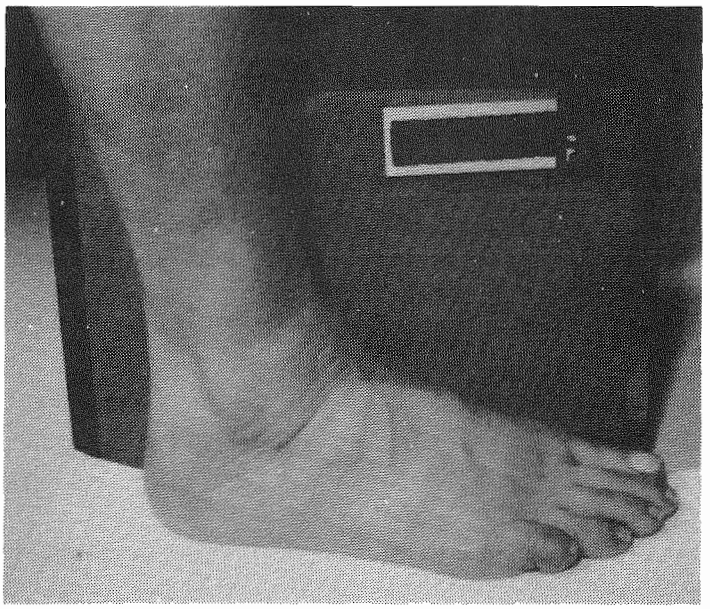
Tube angle is 0° from vertical.

Central ray aimed at center of ankle joint.

Collimate beam within exposed borders of cassette.

Check setting changes for mA, kVP and exposure time, adjust for edema, dressings or casts.

State, "Don't move."



ANKLE

LATERAL PROJECTION

LAT

This view shows distal tibia and fibula, talus and calcaneus.

Position cassette crosswise, vertically in orthoposer slot. Full cassette is used. Place 1/2"x6"/12" felt pad on orthoposer.

Position patient with apron on, standing on orthoposer and pad. Medial side of foot against cassette, heel slightly away from cassette.

Position name plate and marker on cassette within border, above metatarsals.
Tube angle is 90° from vertical.
Central ray aimed at lateral malleolus, (outside ankle bone).
Collimate beam within exposed borders of cassette including, but not below, felt pad.
Check settings for mA, kVP and exposure time.
State, "Equal weight on both feet and don't move."

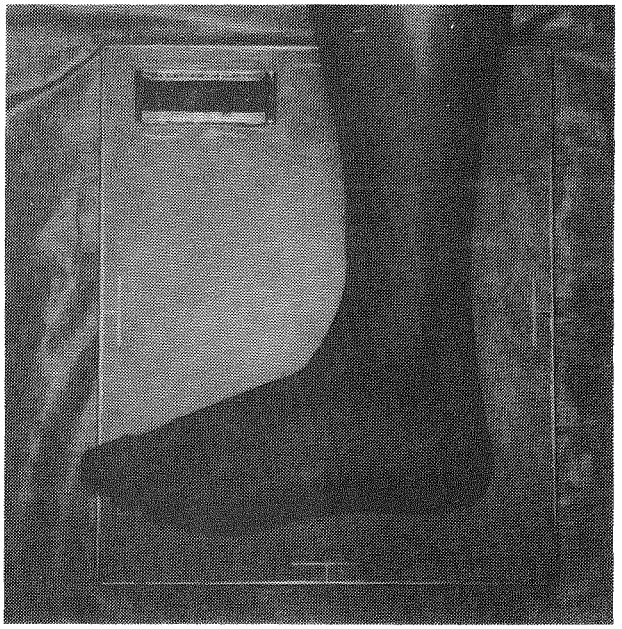
LATERAL PARTIAL WEIGHT BEARING (CRUTCHES)
NON-WEIGHT BEARING (WHEEL CHAIR)

LAT /(PWB) LAT/(NWB)

This same projection may be used for patients on crutches or in a wheel chair with:

CHANGES/CONSIDERATIONS
Position patient with crutches or in wheel chair as close to side of orthoposer as possible and lock wheels. Drape apron to protect gonadal area. Flex knee to position patient as previously described.

Mark name plate (PWB) or (NWB).
Check setting changes for edema, dressings and casts.



ANKLE

LATERAL NON-WEIGHT BEARING (WHEEL CHAIR OR SUPINE)

LAT/NWB

For patients in wheel chair or supine when no contact is desired or possible on plantar surface of foot.

Position cassette flat on orthoposer or table lengthwise to plantar surface of foot. Use full cassette.

Position patient supine with apron on and draped for gonadal protection. With patient's knee flexed, position medial malleolus against cassette, plantar surface of foot is vertical from cassette.

Mark name plate NWB and place on cassette within border above metatarsals.

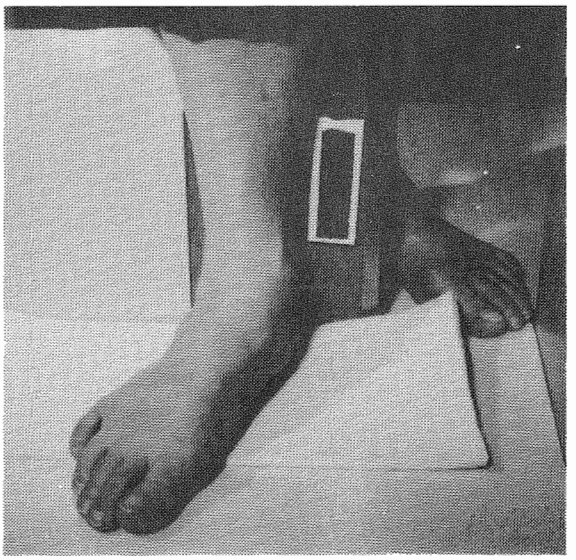
Tube angle is 0° from vertical.

Central ray aimed at lateral malleolus, (outside ankle bone).

Collimate beam within cassette borders.

Check setting changes for mA, kVP and exposure time, adjust for edema, dressings or casts.

State, "Don't move."



ANKLE

LATERAL OBLIQUE PROJECTION
LO

This view shows the distal tibia and fibula, ankle mortise and talus.

Position cassette crosswise, vertically in orthoposer slot. Cover 1/2 of cassette lengthwise with lead blocker, secure with masking tape. Place 1/2"x6"x12" felt pad on orthoposer against cassette lengthwise.

Position patient with apron on, standing on orthoposer, opposite foot behind cassette. Position patient's foot and leg with lateral, posterior heel on pad, against cassette, externally rotate foot and leg approximately 45° from cassette, or as dictated for needed study.

Position name plate and marker on cassette lengthwise in exposed area.
Tube angle is 90° from vertical.
Central ray aimed between malleoli, (ankle bones).
Collimate beam within exposed borders of cassette.
Check settings for mA, kVP and exposure time.
State, "Equal weight on both feet and don't move."

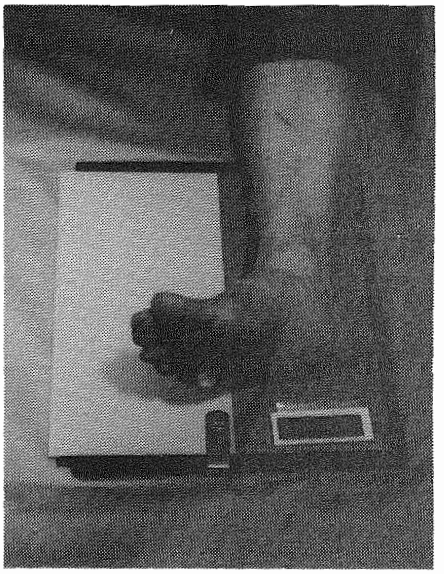
LATERAL OBLIQUE PARTIAL WEIGHT BEARING (CRUTCHES) NON-WEIGHT BEARING (WHEEL CHAIR)
LO/PWB LO/NWB

This same procedure may be used with:

CHANGES/CONSIDERATIONS
Position patient on crutches or in wheelchair at end of orthoposer.

Turn wheels sideways if necessary to get patient closer to orthoposer and lock wheels. Flex knee to position patient as in previous description. Drape lead apron to protect gonadal area.

Mark name plate PWB/NWB.
Check setting changes for edema, dressings and casts.



ANKLE

LATERAL OBLIQUE PROJECTION NON-WEIGHT BEARING (WHEEL CHAIR OR SUPINE)

LO/NWB

For patients in wheel chair or supine position when no contact is desired or possible on plantar surface of foot.

This view shows the lateral aspect of the lower leg and ankle.

Position cassette flat on orthoposer or table. Place lead blocker on 1/2 of cassette lengthwise.

Position patient with apron draped to protect gonadal area. Position leg extended with lateral posterior heel against cassette. Rotate foot and leg externally 45° to cassette. Plantar surface of foot is parallel to cassette. A wedge may be used to maintain position.

Mark name plate NWB and place on cassette lengthwise in exposed area.

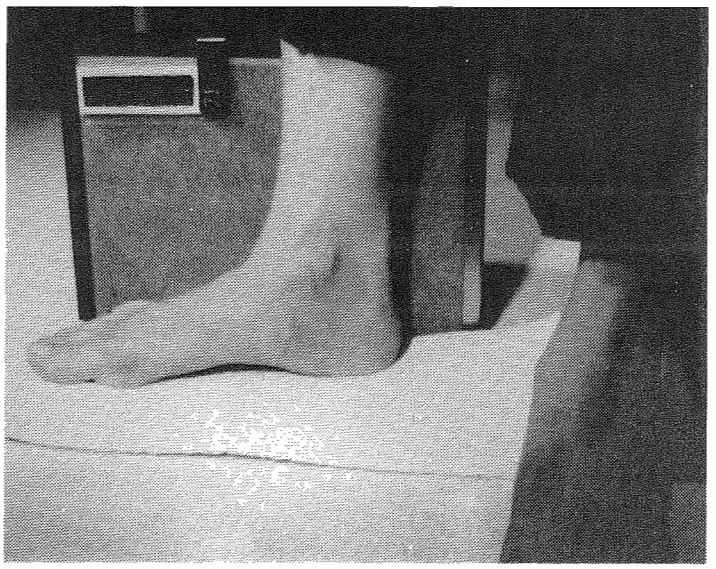
Tube angle is 0° from vertical.

Central ray aimed between malleoli, (ankle bones).

Collimate beam within exposed borders of cassette.

Check setting changes for mA, kVP and exposure time, adjust for edema, dressings or casts.

State, "Don't move."



ANKLE

MEDIAL PROJECTION

Position cassette crosswise, vertically in orthoposer slot. Full cassette is used. Place 1/2"x6"x12" felt pad on orthoposer against cassette lengthwise.

Position patient with apron on, standing on orthoposer and pad, with opposite foot behind cassette. Lateral side of foot is against cassette, and heel slightly away from cassette.

Position name plate and marker on cassette within border above metatarsals.
Tube angle is 90° from vertical.
Central ray aimed at medial malleolus, (inside ankle bone).
Collimate beam within borders of cassette including, but not below, felt pad.
State, "Equal weight on both feet and don't move."

MEDIAL PARTIAL WEIGHT BEARING (CRUTCHES
MEDIAL NON-WEIGHT BEARING (WHEEL CHAIR)

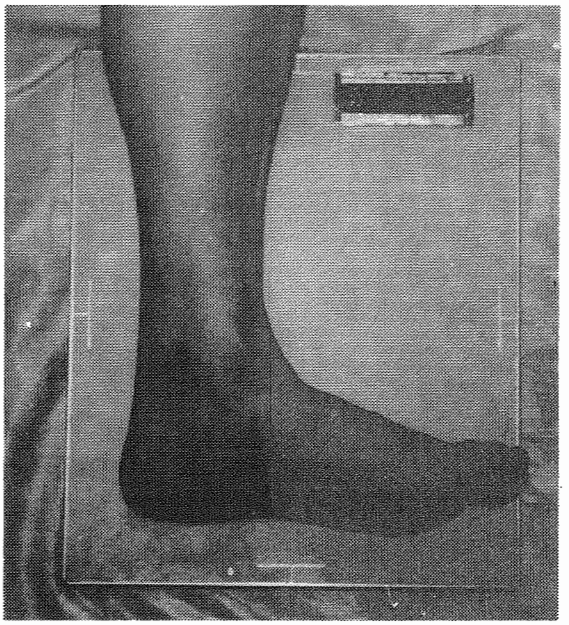
PWB NWB

This projection may be used for patients on crutches or in a wheel chair with:

CHANGES/CONSIDERATIONS

Position patient as close to orthoposer side as possible. Lock wheels on wheel chair. Drape apron to protect gonadal area. Flex knee to position patient as previously described.

Mark name plate PWB or NWB.
Check setting changes for edema, dressings and casts.



ANKLE

MEDIAL PROJECTION NON-WEIGHT BEARING (WHEEL CHAIR OR SUPINE)

MED/NWB

For patient's in wheel chair or supine when no contact is possible or desired on plantar surface of foot.

Position cassette flat on orthoposer or table lengthwise to plantar surface of foot. Use full cassette.

Position patient with apron on and draped for gonadal protection. With patient's knee flexed, position lateral malleolus against cassette, plantar surface of foot is vertical from cassette.

Mark name plate NWB and place on cassette within border above metatarsals.

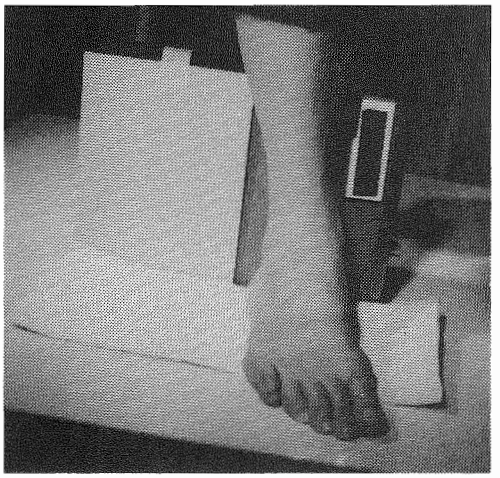
Tube angle is 0° from vertical.

Central ray aimed at medial malleolus, (inside ankle bone).

Collimate beam within cassette borders.

Check setting changes for mA, kVP and exposure time, adjust for edema, dressings or casts.

State, "Don't move."



ANKLE

MEDIAL OBLIQUE PROJECTION

MO

This view shows the medial aspect of the lower leg and ankle.

Position cassette crosswise, vertically in orthoposer slot. Cover 1/2 of cassette lengthwise with lead blocker and secure with masking tape. Place 1/2"x6"x12" felt pad on orthoposer lengthwise against cassette.

Position patient with apron on, standing on orthoposer and pad, opposite foot behind cassette. Posterior/medial heel against cassette. Foot and leg internally rotated 45° to cassette, or as dictated for needed study.

Position name plate and marker on cassette lengthwise in exposed area.
Tube angle is 90° from vertical.
Central ray aimed between malleoli, (ankle bones).
Collimate beam within exposed borders of cassette including, but not below, felt pad.
Check settings for mA, kVP and exposure time.
State, "Equal weight on both feet and don't move."

MEDIAL OBLIQUE PARTIAL WEIGHT BEARING (CRUTCHES)
NON-WEIGHT BEARING (WHEEL CHAIR)

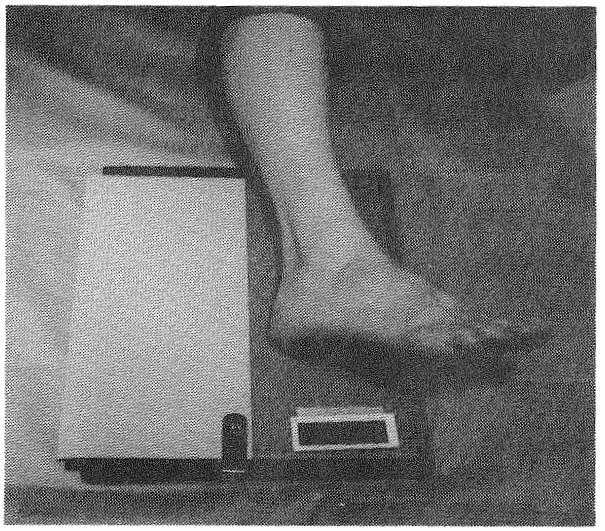
MO/PWB MO/NWB

This same procedure may be used with patients on crutches or wheel chair:

CHANGES/CONSIDERATIONS

Position patient with crutches or wheelchair at end of orthoposer. Turn wheels if necessary to get patient closer, and lock wheels. Drape apron to protect gonadal area. Flex knee to position patient as in previous description.

Mark name plate PWB/NWB.
Check setting changes for edema, dressings and casts.



ANKLE

MEDIAL OBLIQUE NON-WEIGHT BEARING (WHEEL CHAIR OR SUPINE)
MO/NWB

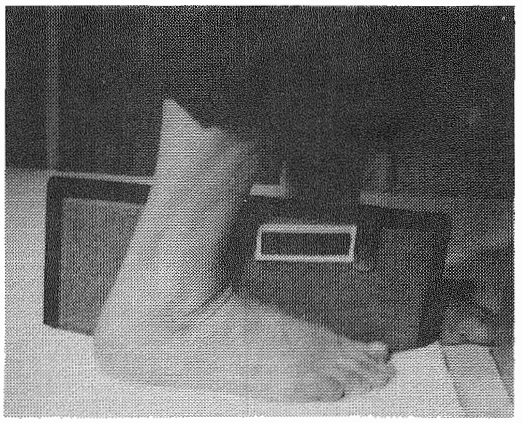
For patients in wheel chair or supine position when no contact is desired or possible on plantar surface of foot.

Position cassette flat on orthoposer or table. Place lead blocker on 1/2 of cassette lengthwise, and secure with masking tape.

Position patient supine with apron draped for gonadal protection, leg extended with medial/posterior heel against cassette. Rotate foot and leg internally 45° to cassette. Plantar surface of foot parallel to cassette. A wedge may be used to maintain position.

Mark name plate NWB and place on cassette lengthwise in exposed area.

Tube angle is 0° from vertical.
Central ray aimed between malleoli, (ankle bones).
Collimate beam within exposed borders of cassette.
Check settings for mA, kVP and exposure time, adjust for edema, dressings and casts.
State, "Don't move."



* See Note

ANKLE

STRESS DORSIFLEXION PROJECTION

Position cassette lengthwise vertically in orthoposer slot, using full cassette. Place 1/2"x6"x12" felt pad on orthoposer, against cassette lengthwise.

Position patient with apron on, standing on orthoposer and pad, medial side of foot against cassette, opposite foot forward and behind cassette. Have patient flexing knees and ankle to dorsiflex foot as far as possible, still maintaining heel flat on orthoposer.

Position name plate and marker on cassette within border above forefoot.

Tube angle is 90° from vertical.

Central ray aimed at lateral malleolus, (outside ankle bone).

Check settings for mA, kVP and exposure time.

State, "Don't move."

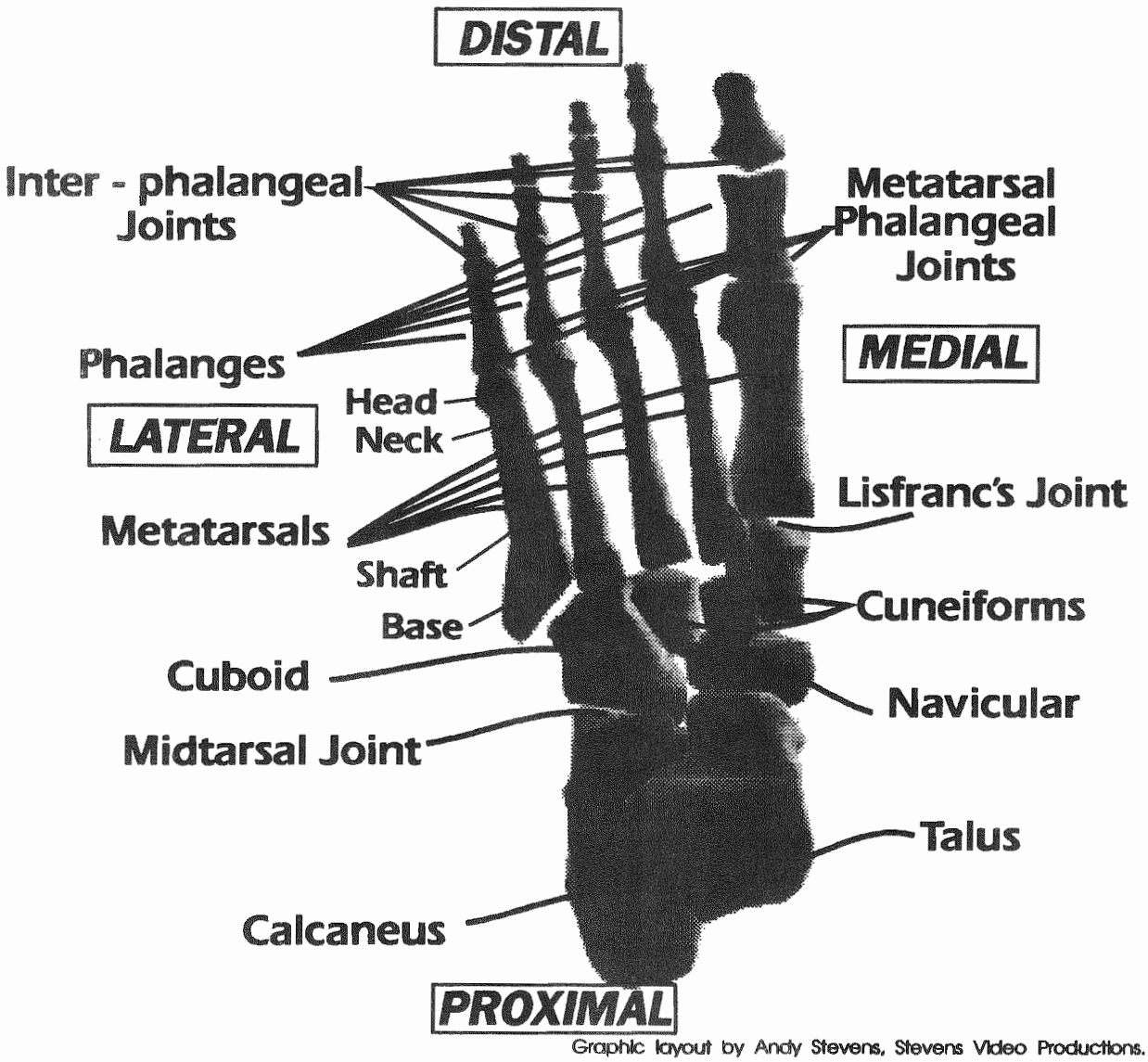
*Note: Photo error. Use full cassette for radiograph, same position.

Troubleshooting Chart

MAJOR CAUSES:	Developer Temperature	Developer Depleted	Developer Contaminated	Developer Over Diluted	No Starter in Fresh Developer	Incorrectly Mixed Developer	Fixer Depleted	Replenishment Rates Incorrect	Water Problems	Dryer Problems	Loss of Circulation	Dirty Rollers	Dirty Water	Filter Size Too Small	Misaligned Guideshoes	Improper Film Handling	Safe Lights	Storage
OBSERVATIONS:																		
INCREASED BASE FOG	1	5	4		2		4	4				3					2	2
REDUCED CONTRAST	1	1	2	3	1	1	2	2			4	3					2	2
INCREASED CONTRAST	1					1		1										
REDUCED FILM SPEED	1	2	3	3		2		2			5							
INCREASED FILM SPEED	1		1		1	2	2	3			5	3				4	4	3
WET OR DAMP FILMS	3	2	2	2		2	1	2		3	2	4						
IMPROPER CLEARING	2	2	2	2	5	3	1				2							
DIRTY FILMS	2	2	2	2		2	3		1	3	2	2	2	2		3		
SCRATCHES ON FILMS	2	2	3	2		3	2			2		1			1	2		

1 CHECK FIRST 2 CHECK SECOND 3 CHECK THIRD 4 CHECK FOURTH 5 CHECK LAST

Foot Diagram



Graphic layout by Andy Stevens, Stevens Video Productions.