Marking Anatomical Landmarks on Master Casts

Mark the following maxillary anatomical landmarks on the land area:
1. center of incisive papilla
2. center of the posterior ridge
3. midline

Mark the following mandibular anatomical landmarks on the land area:
1. retromolar pad posteriorly
2. upper 2/3 of retromolar pad
3. Ascending ramus of the mandible
4. center of posterior ridge
Maxillary Custom Tray Fabrication

1. Mark the depth of the vestibule in blue pencil as pictured below. The outline of the tray should be marked in red as follows, starting at the disto-buccal side of the pterygomaxillary notch. Make a red line 2 mm medial and parallel to the depth of the vestibule (note that the tray will be made short of the vestibule by 2mm but slightly overextended on the palate).

2. Block out excessive undercuts with baseplate wax. Do not over wax or the tray will not fit the mouth accurately. Be especially conservative with your wax block out in the maxillary
labial flange area. Too much wax block out can cause just as many problems as too little block out.

3. Apply a thin layer of wax on the palatal rugae area.
4. Apply a light coat of model releasing agent or Vaseline over the entire tissue surface of the cast to serve as a separating medium.
5. Place a sheet of Custom Tray Triad resin in the palate of the cast and adapt the resin gently moving from the depth of the palate to the borders of the vestibules to avoid trapping air bubbles under the tray material.
6. Carefully trim the material to the red line previously marked for the custom tray extension. Make the borders of the tray as smooth as possible prior to curing the resin as it is much easier to smooth when it is soft. Take care not to use excessive finger pressure and thin out the resin.
7. Fabricate the maxillary custom tray handle according to the following criteria:
   a. 10 – 15 mm wide mesio-distally in the area previously occupied by the anterior teeth
   b. 3 – 5 mm thick bucco-lingually
   c. 22 mm long from the longest point on the labial flange (custom tray extension) to the incisal edge.
   d. The handle should be slightly inclined labially.
8. Cure the material for 4 minutes in the Triad unit.
9. Remove tray from the cast and gently trim and smooth borders while the resin is partially cured.
10. Invert tray and complete curing for 4 minutes
MANDIBULAR CUSTOM TRAY FABRICATION

Do not forget to mark the retromolar pad and the ascending ramus of the mandible before beginning custom tray fabrication.

1. Mark the depth of the vestibule in blue as pictured below. Outline the mandibular custom impression tray starting at the disto-buccal area of the retromolar pad. Draw this red line approximately 2 mm medial to the depth of the vestibule (blue line).

2. Continue this line, allowing clearance for the frena, until you reach the disto-buccal area of the opposite retromolar pad. Note that the tray will be made 2mm short of the buccal and labial vestibule.

3. Block out severe undercuts on the mandibular cast with hard baseplate wax
4. Lubricate the ridge and land areas with model releasing agent or Vaseline. Remove any gross excess.
5. Cut a V-shaped wedge out of the middle of the Triad sheet to permit adaptation of the wafer to the lingual of the cast.

6. Fabricate the mandibular tray handle that has three components: one anterior and two posterior handles. Use the following criteria:
   a. **15 mm wide mesio-distally** in the **anterior** area
   b. **20 mm wide mesio-distally** in the **molar** area
   c. **18 mm long** from the longest point on the labial flange (custom tray extension) to the incisal edge for the anterior handle
   d. The posterior handle terminates anterior (or mesial) to the ascending ramus.
   e. The posterior handle height is at the level 2/3 the height of the retromolar pad.
   f. All three handles should occupy space that was previously occupied by teeth and alveolar bone in order to avoid displacing border tissues.

7. Adapt the material as before and cure using the same method as the maxillary tray.
# Maxillary and Mandibular Custom Impression Tray Evaluation Form

<table>
<thead>
<tr>
<th>Evaluation Criteria</th>
<th>Maxillary</th>
<th>Mandibular</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Handle positioned correctly</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>2 Tray handle length</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maxillary 22 mm</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Mandibular 18 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Borders 2 – 3 mm short of vestibule</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>4 Maxillary covers tuberosity</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>5 Mandibular covers retromolar pad</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>6 Adequate relief for frenum</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>7 Borders smooth and well-rounded</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>8 Tray fits properly, is stable, rigid</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>9 Palate is closely adapted</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td><strong>Custom tray grades</strong></td>
<td>/5 pts</td>
<td>/5 pts</td>
</tr>
</tbody>
</table>