Surveyor and surveying procedure

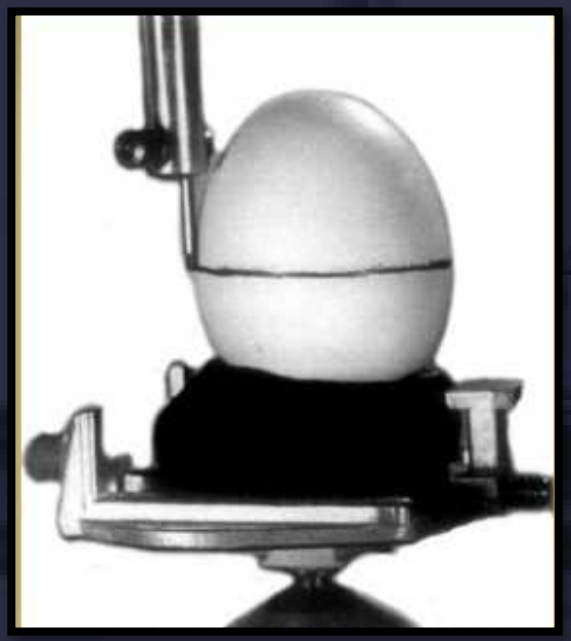
INTRODUCTION

- An essential key to success in the practice of making the prosthesis is the thorough, knowledgeable planning of each structural detail of the prosthesis.
- Surveying- integral part of the planning process.

- **Why there is need of surveying ????**
  - Asymmetrical, disparate clusters of teeth,
  - Uneven unparallel axial surfaces
  - Retentive undercut
  - To evaluate esthetic value.

Principle of Surveying

- If a vertical plane is brought into contact with a curved surface, it will touch at the greatest bulge on the convexity and no where else.
- The Location of undercut area can be changed by changing the tilt.



DEFINITIONS

- **SURVEYING** : - An analysis and comparison of the prominence of intraoral contours associated with the fabrication of dental prosthesis. -(GPT 8th ed)

- ***SURVEYOR*** :- *A paralleling instrument used in the construction of a dental prosthesis to locate and delineate the contours and relative positions of abutment teeth and associated structures .*

  -(GPT 8th ed)

Ney surveyor

Jelenko surveyor

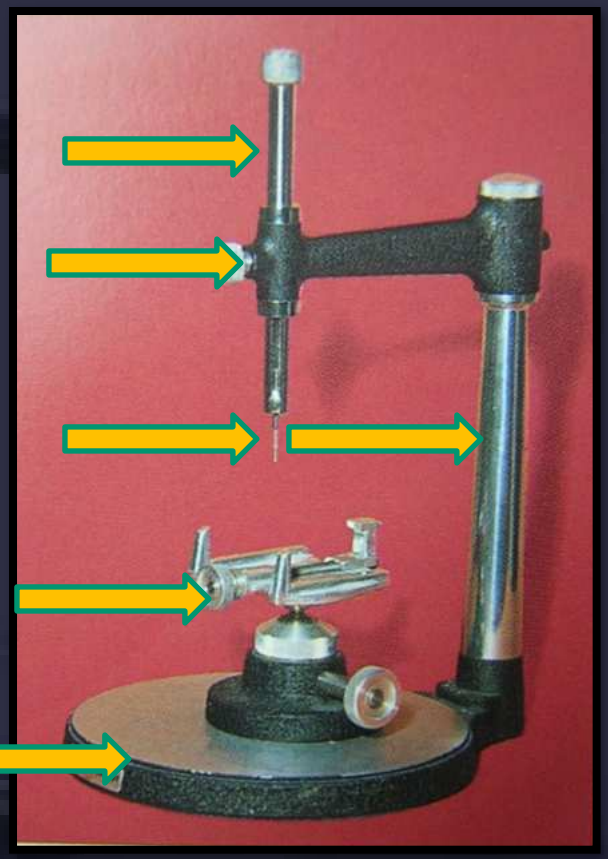
Williams surveyor

Difference between Ney and Jelenko surveyor

Ney Surveyor	Jelenko Surveyor
1. Horizontal arm is fixed	1. Horizontal arm is movable
2. Vertical arm is retained by friction	2. Vertical arm is spring mounted
3. The shaft remains in any vertical position until again it is moved	3.Vertical arm when released returns to its original position. It should be held against spring tension
4. Cast table is moved around surveyor platform	4.Cast table is fixed with the magnet in the surveyor plat form

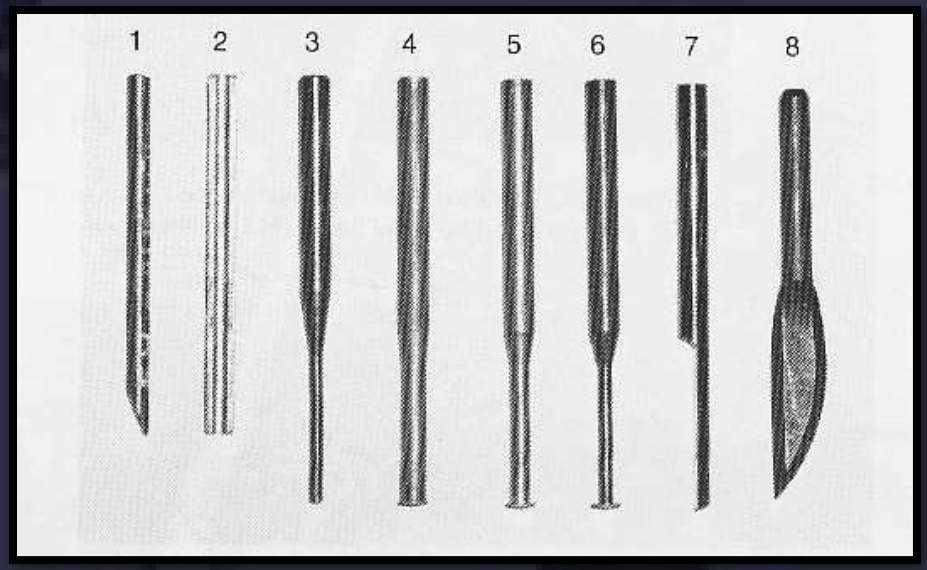
PARTS OF SURVEYOR

- Horizontal Platform
- Vertical Arm
- Horizontal Arm
- Surveying Arm
- Mandrel
- Cast holder
- Surveying tools



Surveying tools

- Analysing rod
- Carbon marker
- Undercut gauges
- Wax carver
- Wax knife



E.L.Miller,J.E.Grasso:Removable Partial Prosthodontics.2nd edition

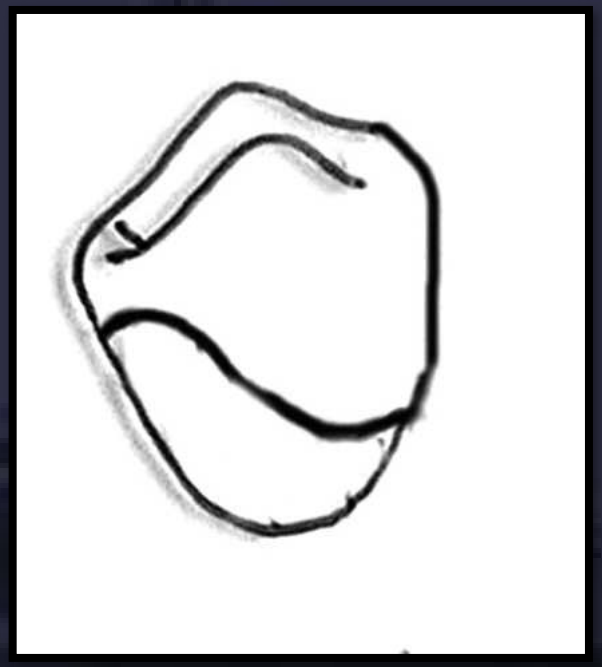
Purposes of surveyor

- Surveying diagnostic cast
- Recontouring of abutment teeth
- Contouring wax patterns
- Depth of undercut
- Surveying ceramic veneer crowns
- Placement of Intracoronal retainers
- Internal rests placement
- Machining cast restorations
- Surveying and blocking out master cast

E.L.Miller,J.E.Grasso:Removable Partial Prosthodontics.2nd edition

- **Height of contour :**

A line encircling a tooth and designating its greatest circumference at a selected axial position determined by a dental surveyor;



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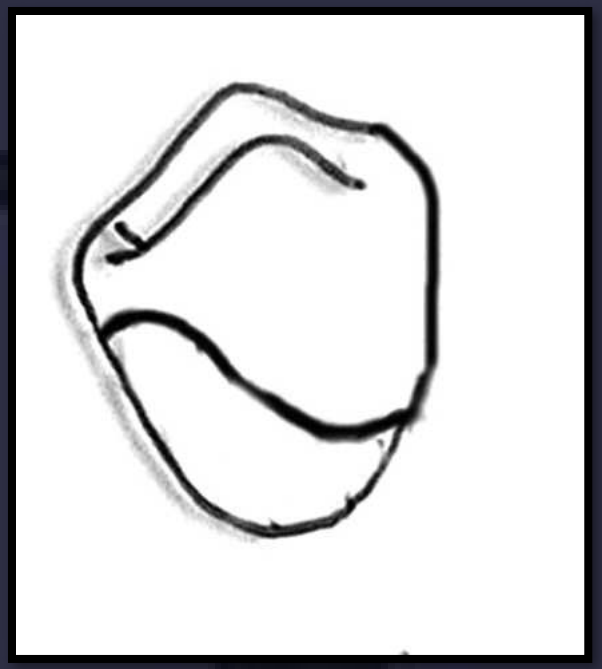
- **Suprabulge :**

  That portion of a tooth or crown that converges toward the Occlusal surface, i.e., above the height of contour



- **Infrabulge :**

  That portion of the crown of a tooth apical to the survey line

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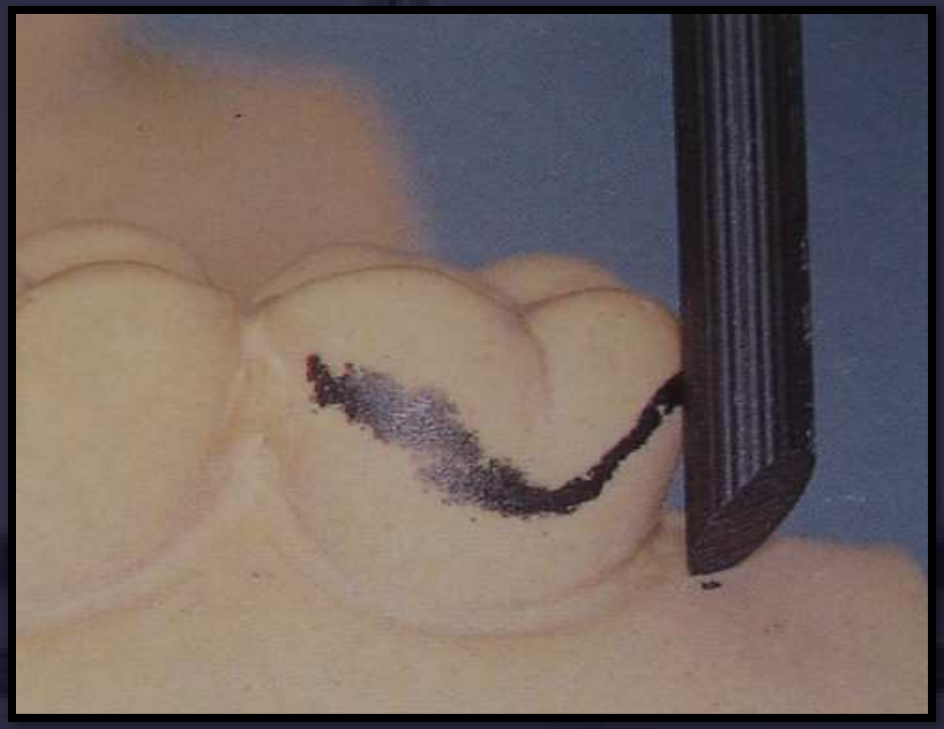
- **Survey line**

  A line produced on a cast by a surveyor marking the greatest prominence of contour in relation to the planned path of placement of a restoration



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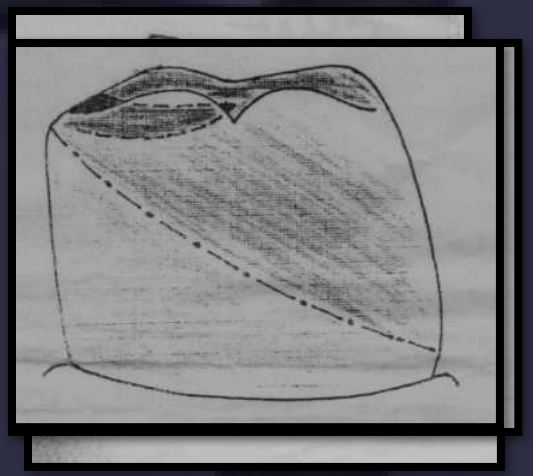
Classification of survey line(Blatterfein's)

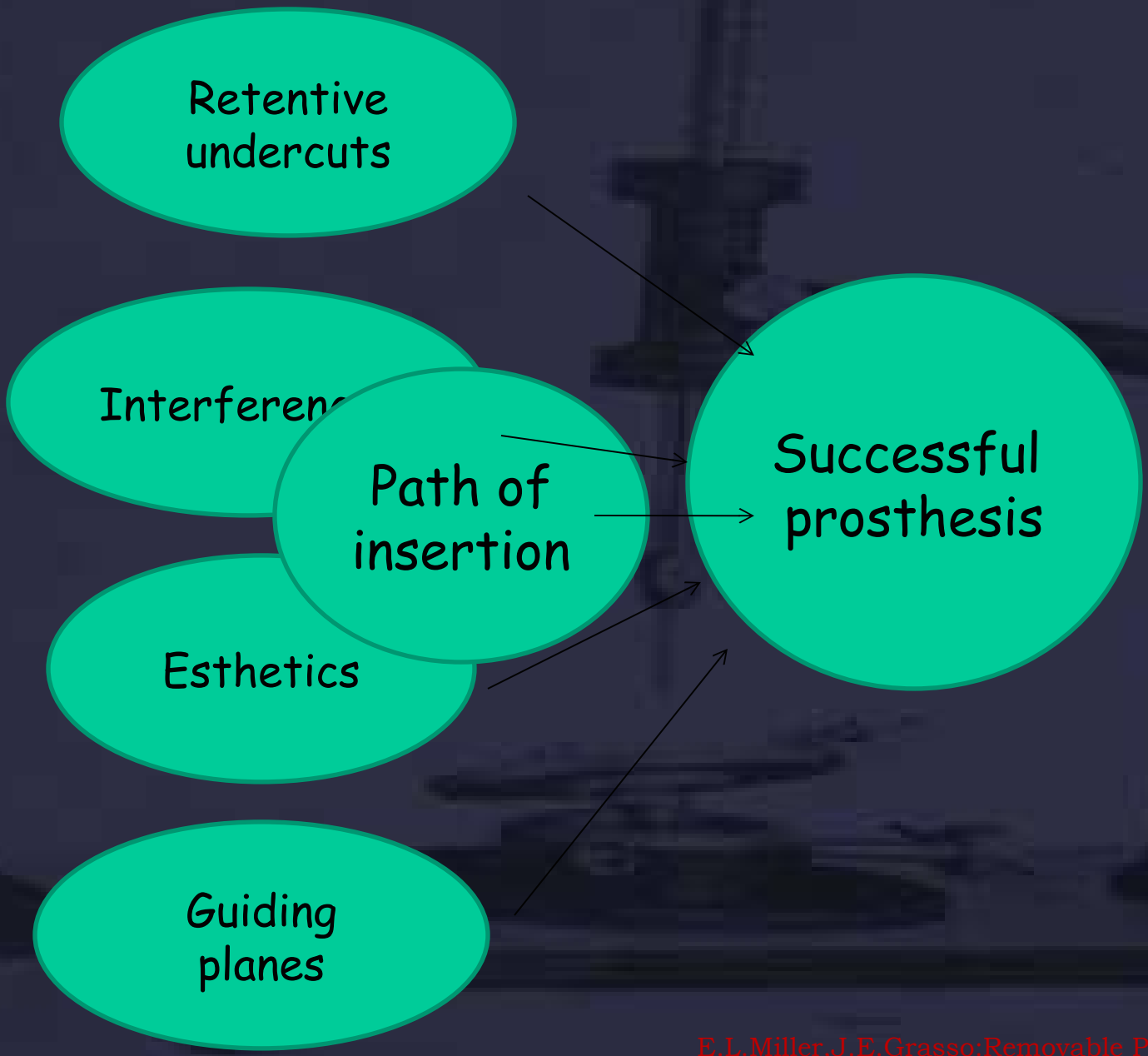
- High survey line
- Medium survey line
- Low survey line
- Diagonal survey line



Textbook of partial dentures ;osborne and lammie

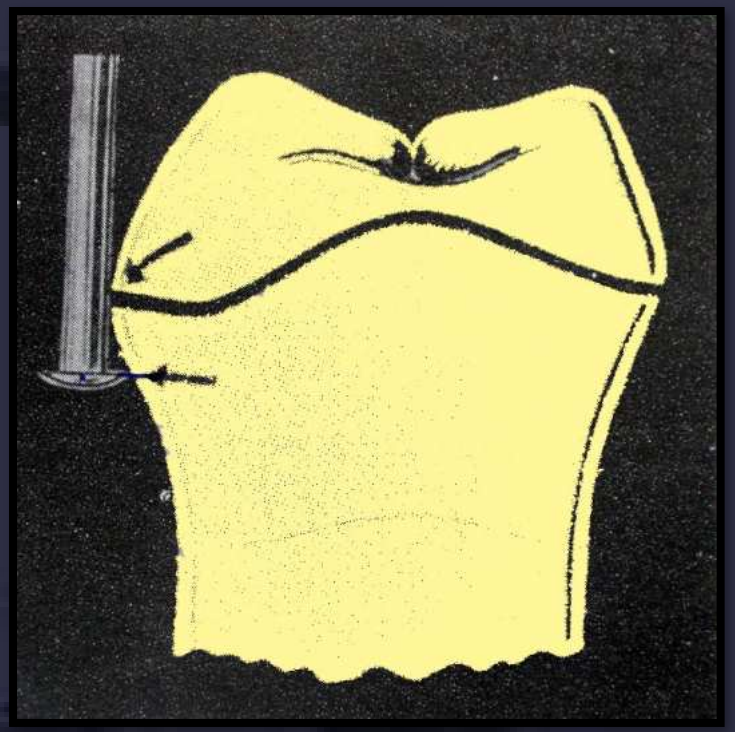
PATH OF PLACEMENT/INSERTION

- **Definition –** Path of placement is the direction in which a restoration moves from the point of initial contact of its rigid parts with the supporting teeth to its terminal resting position with rest seated and denture base in contact with the tissues.

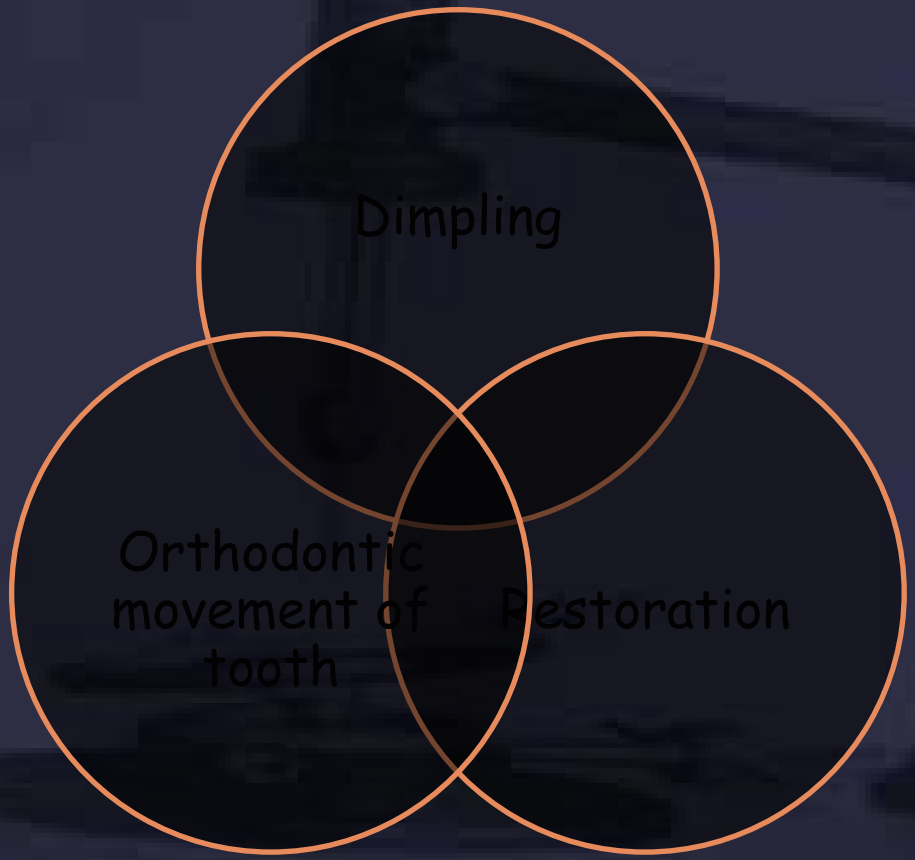

Retentive undercuts
Interferen
Path of insertion
Esthetics
Guiding planes
Successful prosthesis

Retentive undercuts

- 0.01" cobalt chromium
- 0.02" combination clasps
- 0.03" gold alloys



Undercuts can be made favorable by:



Interferences

Soft tissue obstacles

- Mylohyoid ridge
- Tuberosity
- Mental region of mand
- Severe

Hard tissue obstacles

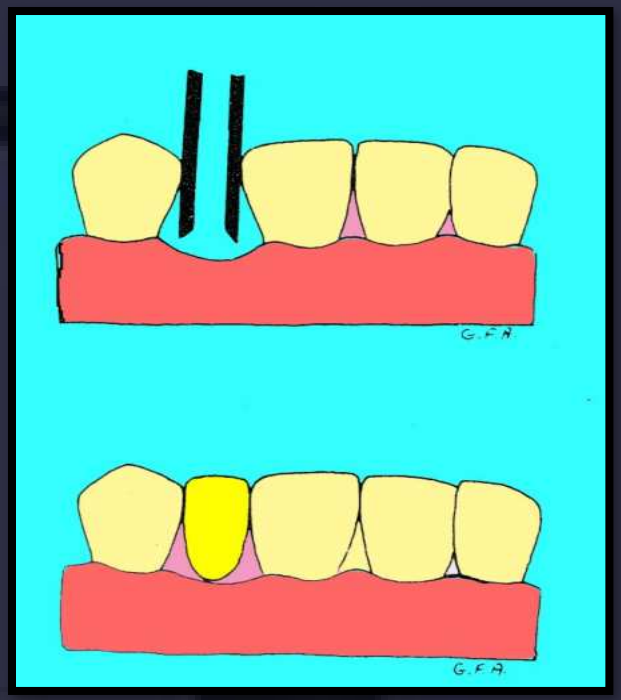
- Migrated,tipped and ed teeth
- Lingually inclined r lar teeth
- Undue angles of ads, which in

Interferences

Esthetics

1.The metal must be concealed without compromising support and stability of the prosthesis

2. Artificial anterior teeth must be placed in most natural position.



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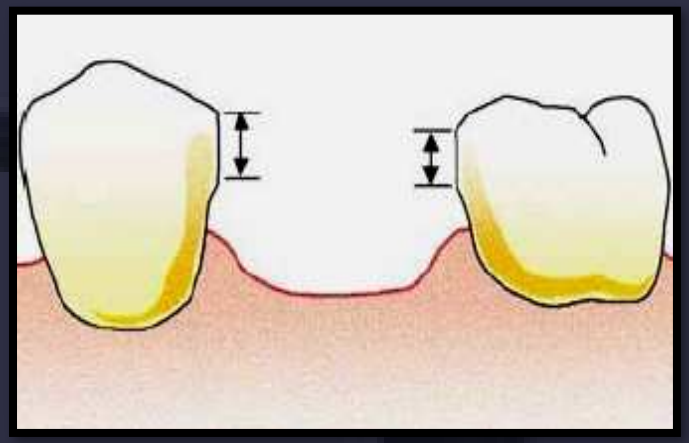
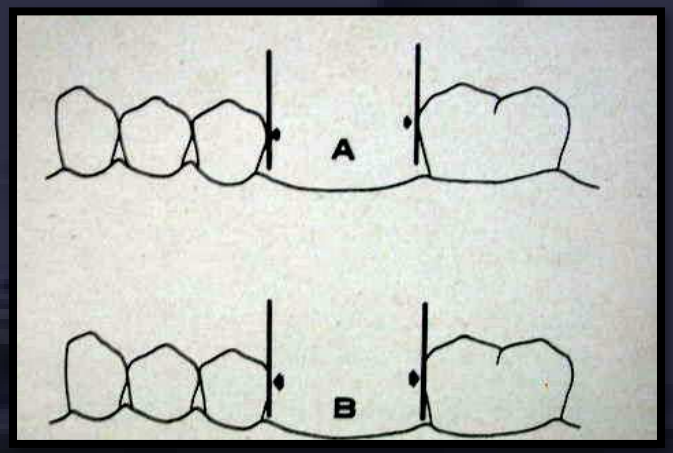
Guiding planes

- Vertically parallel surfaces on abutment teeth or/and dental implant abutments oriented so as to contribute to the direction of the path of placement and removal of a removable dental prosthesis

GPT-8





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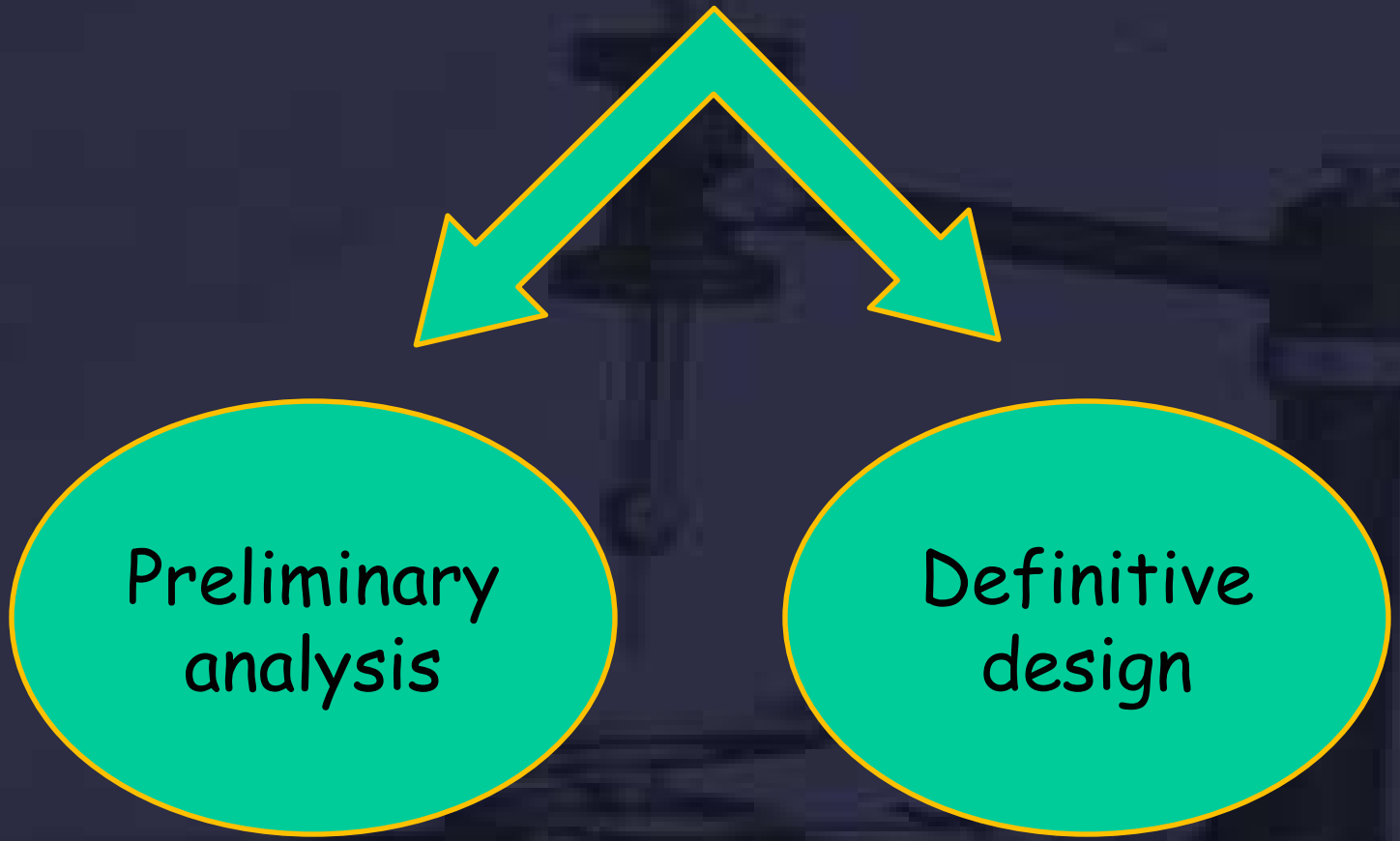
Functions

- To facilitate easy insertion & removal of denture
- To minimize harmful stresses on the abutment teeth
- To stabilize prosthesis against horizontal movement
- To aid in retention of denture
- To make the prosthesis hygienic

PROCEDURE FOR SURVEYING



Preliminary analysis

- Evaluating the claspability of potential abutments
- Identifying interferences and undesirable undercuts
- Esthetic considerations
- Identifying potential guiding plane surfaces

Definitive design of the prosthesis

- Guidelines are drawn on the cast
- Undercuts are measured and marked
- Soft tissue undercuts are delineated
- Design of the framework is outlined

Surveying of diagnostic cast

- To determine the most desirable path of placement
- To identify proximal tooth surfaces that are or need to be made parallel
- To locate and measure areas of the teeth that may be used for retention.

- To permit an accurate charting of the mouth preparations to be made.
- To determine whether areas of interference need to be eliminated surgically or by changing the path of placement.
- To record the cast position for future reference.

TRIPODING

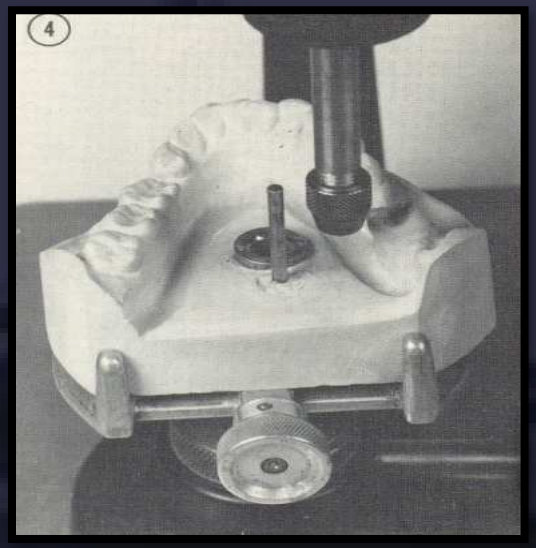
- Tripoding is a method of indexing the cast while it is on the surveyor so that it can be removed and returned to its original position wherever desirable.

Mc Cracken's removable partial prosthodontics;11th edition

TRIPODING

Tissue surface indexing

Art surface indexing



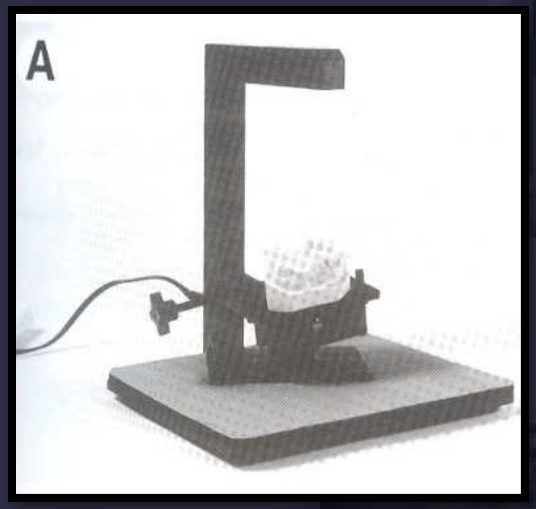
Cemented pin method

Surveying of the master cast

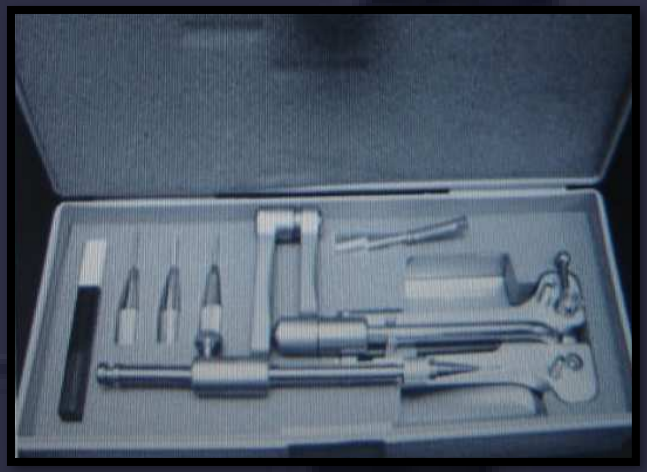
- Evaluate the accuracy of mouth preparation.
- To re assess the retentive undercuts
- To block out the interferences
- To trim the block out material parallel to the path of placement before duplication.

Recent advances in surveyor

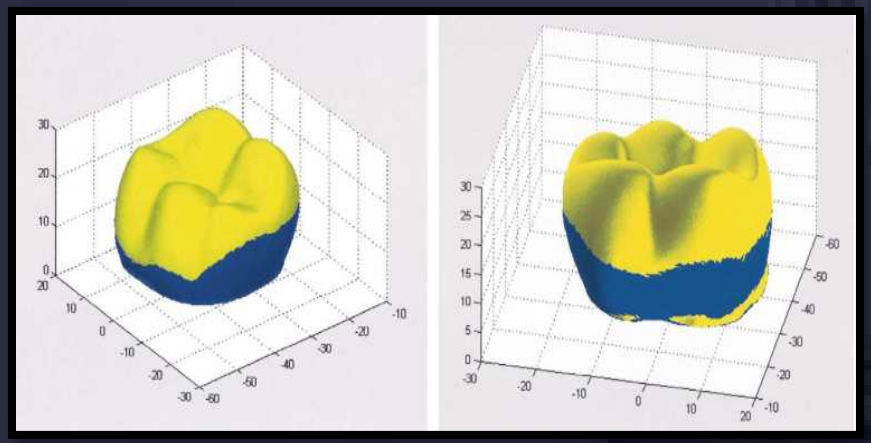
Laser light surveyor



Handy surveyor

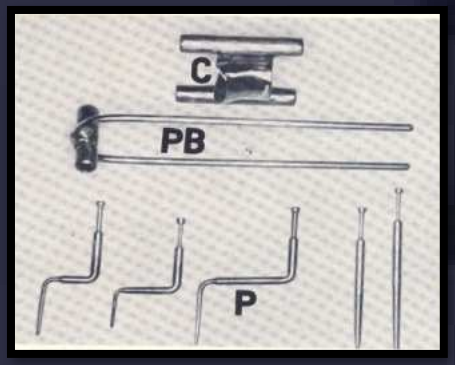


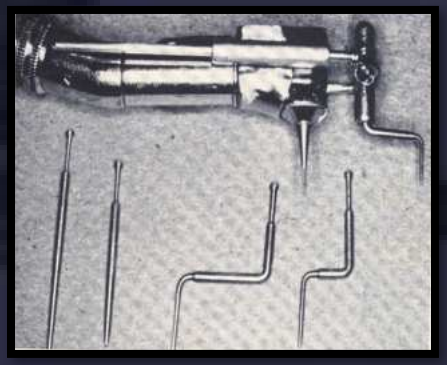
- 3D digitizer



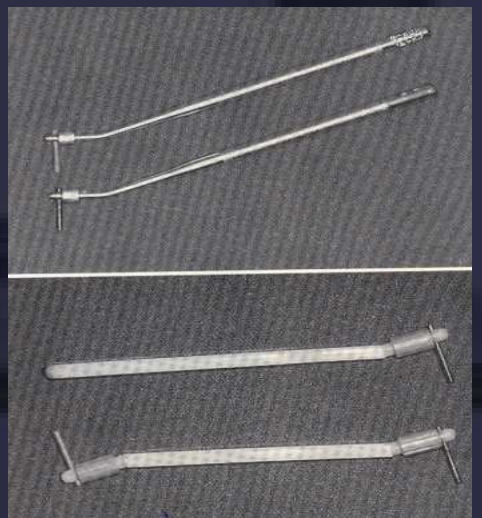
Intra oral surveyor

- German Schoneck





- By Charles A Netti



CONCLUSION

- Proper placement and contour of the components of design can be achieved only through an adequate survey and well planned mouth preparation.

- Compromising the ideal in the location and design of components, however, may jeopardize the potential success of the prosthesis.

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THANK YOU