

The

ROYAL CANADIAN DENTAL CORPS

Quarterly



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The RCDC Quarterly

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Cover Photograph

Demonstration - Officers' Clinical Course
RCDC School - Camp Borden



Main Entrance - Walter Reed General Hospital

WALTER REED ARMY MEDICAL CENTER

Since 1949, when the first RCDC officer was sent to "Walter Reed" for post-graduate training in Dentistry, the Corps has had the privilege of being almost continuously represented at that Institution. The resulting over-all benefit to the Corps cannot be estimated. It therefore seems appropriate that any of our members unfamiliar with the history and function of "Walter Reed" should become informed and that is the purpose of this brief article.

Walter Reed - the man

A name which has become famous in the world of Medicine is that of Walter Reed. However, few people know why this name was given to one of the great medical centers of our day.

Walter Reed was born in Belroi, Virginia, in September 1851. He studied at the University of Virginia and at the Bellevue Hospital Medical College. In 1875 Doctor Walter Reed entered the Medical Corps of the United States Army and spent the next eighteen years in service at different army posts in Arizona and other Western Territories.

After taking special training at John Hopkins University, he was promoted to the rank of Major in 1893 and became professor of Bacteriology and Clinical Microscopy in the newly organized Army Medical School in Washington, DC.

Interested in research, Major Reed studied the causes and methods of transmission of diphtheria, erysipelas and typhoid fever.

* Editor's Note

This brief history of "Walter Reed" and commentary regarding the RCDC's association with that Institution was submitted by Major JY Turcotte who recently completed the course in "Advanced Theory and Science of Dental Practice".

On February 15, 1898, a United States battleship, the Maine, was sunk in Havana harbour and this event constituted a principle cause for the Spanish-American War. American troops departed for Havana and in June 1900 Major Walter Reed was assigned to Cuba. The United States Government had taken over Cuba on January 1, 1899, and the main problem it was facing was the maintenance of health under conditions which for centuries had been frightful; one main concern: Yellow Fever.

In 1900, Reed began special work in Cuba as head of a commission of medical officers appointed to study the cause of Yellow Fever and discovered the real infective agent. Using soldiers as volunteers the medical commission demonstrated in 1901 that only through the bite of the mosquito "Aedes Aegypti" was Yellow Fever propagated. The commission enforced the screening of doors and windows and poured kerosene over the swampy breeding places, thus exterminating the plague that had been a curse to Havana for more than 140 years.

On his return to the United States, Walter Reed resumed his teaching position at the Army Medical School and also became professor of Bacteriology and Pathology in the Medical School of Columbian (now George Washington) University.

In November 1902 Major Reed was admitted to the hospital with appendicitis. His good friend Major William C Borden performed the operation, but peritonitis developed and on November 23rd 1902 he passed away.

Walter Reed's remains were interred at Arlington Cemetery. The epitaph on his monument reads: "He gave to man control over that dreadful scourge, Yellow Fever."

The Hospital and Institutes

Walter Reed Medical Center, Main Section, is located in an attractive residential section of Washington DC between Rock Creek Park and Georgia Avenue near the DC-Maryland line. Today the Center comprises more than one hundred rose-brick structures of Georgian style architecture with an average daily population of more than 7000.

On September 1st, 1923, the Army Medical Center was formed, including the hospital, the Army Medical School, the Army Veterinary School and the Army Dental and Nursing Schools.

As a tribute to the conqueror of Yellow Fever, the Center was renamed "Walter Reed Army Medical Center" on the 100th anniversary of Reed's birth in September, 1951.

In 1955 the Armed Forces Institute of Pathology moved from downtown Washington to an ultra-modern bomb resistant building on the campus.



The Armed Forces
Institute of Path-
ology

- the only building
within the complex
not faced with rose-
brick

In addition to Walter Reed General Hospital, institutions that have joined the fight against illness at Walter Reed include the United States Army Institute of Research, Armed Forces Institute of Pathology, U.S. Army Medical Biomechanical Research Laboratory, the Army Medical Services' Historical Unit, U.S. Army Institute of Dental Research, U.S. Army Regional Dental Activity and the Walter Reed Army Institute of Nursing.

It is interesting to note that three dental officers pursue post-graduate training at the Armed Forces Institute of Pathology, a tri-service agency of the Department of Defence.

The Army Prosthetic Research Laboratory situated at Forest Glen, which is now called the United States Army Medical Biomechanical Research Laboratory, is under the direction of a specialized Dental Officer. Besides artificial limbs, the Laboratory has been working on an artificial hip, artery and trachea. The artificial ears, noses, hands and limbs duplicate the individual's skin tone and even provides hair, bruises and freckles!

The Army Central Dental Laboratory, now known as the United States Army Regional Dental Activity, provides a modern two-story air-conditioned building where complete dentures, partial dentures, crowns and bridges are made together with oral surgical splints. The building also houses the Department of Dental Materials, United States Army Institute of Dental Research, where new products are currently tested and evaluated with the most modern equipment.

Post-graduate Courses

The RCDC has long been represented at the United States Army Institute of Dental Research, presently under the direction of Colonel George W. Burnett. This institute is responsible for dental graduate, post-graduate courses, and research. The teaching is done by Army Dental Officers specialized in disciplines such as Anatomy, Microbiology, Oral Pathology, Biochemistry, Pharmacology, Physiology, Oral Medicine and all the other specialties of Dentistry. They are assisted in extended courses by professors from the Georgetown University. Of twenty-three Dental Officers on staff at the United States Army Institute of Dental Research, four have earned PhD degrees.



United States Army Institute of Dental Research

In the past, the main course offered by the Institute of Dental Research was that of Dentistry Advanced, of four month's duration and presented twice a year. It has been replaced by the Advanced Theory and Science of Dental Practice, a course of ten month's duration, which consists of a program of graduate study conducted by Georgetown University Graduate School and the United States Army Institute of Dental Research. Thirty semester hours of graduate credit are given by Georgetown University Graduate School for the successful completion of this course. In addition to this ten month's course, the United States Army Institute of Dental Research offers other short courses such as the Current Concepts in Restorative Dentistry, Preventive Dentistry, Prosthodontics, Oral Surgery, Periodontics, Advanced Pathology of the Oral Region and Oral Diagnosis and Therapeutics. These courses are offered to United States military dental officers, civilian practitioners and allied forces dental officers.

Finally, clinical dentistry is practised in two clinics at Walter Reed. One is called the out-patient clinic, the other the main clinic of Walter Reed General Hospital. All referred and in-patients are treated in the main clinic. Twenty-nine Dental Officers are assigned to these two clinics and six of these are board certified specialists. Under their direction eight residents and four interns undergo training.

RCDC Officers who have attended courses at Walter Reed

- Major TL Marsh - Dentistry Advanced - Class 1 - January-April 1949
- Major WM Sinclair - Dentistry Advanced - Class 5 - January-April 1951
- Major GR Covey - Dentistry Advanced - Class 6 - August-December 1951
- Major GRH Cunningham - Dentistry Advanced - Class 12 - August-November 1954
- Lt-Col BP Kearney - Dentistry Advanced - Class 15 - January-May 1956
- Major JC Brick - Dentistry Advanced - Class 15 - January-May 1956
- Major GC Evans - Dentistry Advanced - Class 16 - August-November 1956
- Major G MacDougall - Dentistry Advanced - Class 18 - August-November 1957
- Major JW Turner - Dentistry Advanced - Class 21 - January-May 1959
- Lt-Col CE Purdy - Dentistry Advanced - Class 23 - January-May 1960
- Major WR Thompson - Dentistry Advanced - Class 26 - July-November 1961
- Major PS Sills - Dentistry Advanced - Class 25 - January-May 1961
Trends in Dental Laboratory Activities - October 1964
Residency in Prosthodontics - September 1964-August 1966
- Major DH Skinner - Dentistry Advanced - Class 29 - January-May 1963
- Major JVN Wright - Advanced Theory and Science of Dental Practice
Class 2 - August 1964-June 1965
- Major AG Taylor Advanced Theory and Science of Dental Practice
Class 3 - August 1965-June 1966
- Major JY Turcotte - Advanced Theory and Science of Dental Practice
Class 4 - August 1966-June 1967
- Major LA Reynolds - Advanced Theory and Science of Dental Practice
Class 5 - August 1967-June 1968

OCCLUSAL INTERFERENCES
A NEGLECTED ASPECT OF FIXED PROSTHODONTICS

Major Y Kamachi, BA, DDS



Introduction

During recent years there has been much interest and emphasis placed upon the pathology of the oral structures resulting from mal-occlusion. Some of the conditions resulting from occlusal or cuspal interferences include bruxism, extreme tooth wear, spasm of the masticatory muscles, tempero-mandibular and facial pain, tooth trauma and breakdown of the periodontium.

One must consider the removal of cuspal interferences in the initial treatment plan for a crown and bridge prosthesis. The resulting occlusion should supplement and complement the existing dentition and should be harmonious with the existing mandibular function.

Factors Influencing Occlusion

Occlusion is influenced by:

- a. the shape of the tempero-mandibular joint.
- b. the mandibular musculature,
- c. the occlusal planes of the teeth.

The Jaw positions determined by the tempero-mandibular joint include centric relation and right and left lateral relations. The jaw positions determined by the teeth include centric occlusion and right and left lateral occlusion.

Centric relation is the position of the mandible when both condylar heads are in their most retruded position in the glenoid fossae from which lateral movements can be made at a given degree of jaw separation. Centric occlusion is a contact position which may be functional and it does not necessarily coincide with centric relation.

Occlusal harmony exists only when centric and lateral occlusions are compatible with centric and lateral relations and occlusal problems develop when this harmony is disrupted. In the following technique the mouth is used as an articulator in a procedure to eliminate interferences and establish a balanced occlusion.

Technique

A central bearing device or occlusal co-ordinator, more commonly called "Jeffrey's Appliance", can be used in the mouth. It can be fabricated quickly and easily in any dental office with cold-cure resin and a brass machine bolt.

Fabrication of the co-ordinator - Maxillary Section

- a. On the patient's upper cast build a wax dam extending across the palate from the embrasures between the second bicuspid and first molar.
- b. Pour in a creamy mix of cold-cure resin bringing the flat plane of the maxillary appliance to a level approximately 2mm coronal to the gingival margin.
- c. When the resin is hard, remove the appliance and polish the flat bearing surface.

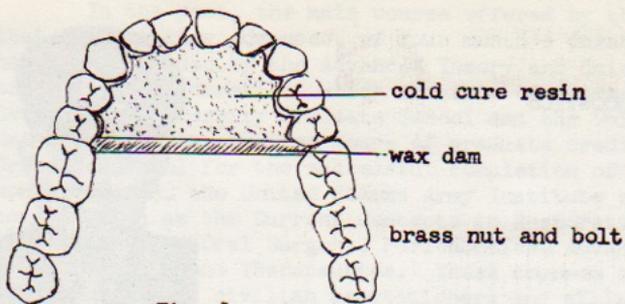


Fig. 1
Maxillary Section

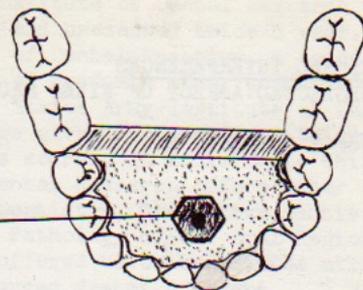


Fig. 2
Mandibular Section

- Mandibular Section

- a. Form a wax dam similar to the one for the maxillary section.
- b. Wax a brass nut and bolt upright immediately lingual to the anterior teeth. (machine bolt 8 x 32)
- c. Pour in a creamy mix of cold-cure acrylic and fill to within 1mm of the tips of the mandibular incisors, embedding the nut and thinly covering the lingual cusps of the first bicuspids. This helps to provide stability.
- d. When the acrylic is set remove and polish the appliance. After shortening the bolt, round and polish the tip.

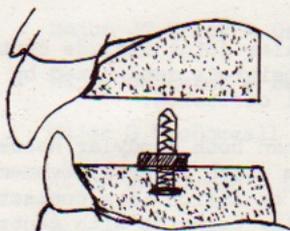


Fig. 3
cross sectional view
of co-ordinator

gothic arch tracing
scratches in resin

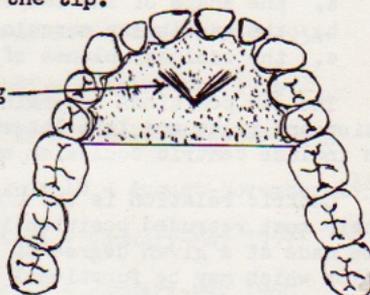


Fig. 4

Fitting the co-ordinator sections is completed in the patient's mouth by:

- a. relieving acrylic that interferes with tooth contact in centric;
- b. removing any interference between the maxillary and mandibular sections.

Using the Co-ordinator

After placing the two sections in the mouth, the bolt is adjusted so that there is no tooth contact in any jaw position. The patient is instructed to move the mandible in all excursions with the bolt in light contact with the maxillary section. This procedure induces relaxation of mandibular movement and the patient can be taught to scribe an acceptable gothic arch tracing. (Fig. 4) The apex of the arch represents centric relation, i.e., the mandible in its most retruded position. When the same gothic arch can be repeated by the patient, one can proceed with the next step in the technique.

Centric occlusion is adjusted in the following manner:

- a. gradually lower the bolt until the first tooth to tooth contact is made;
- b. ensure that the bolt is at the apex of the gothic arch tracing (i.e. centric relation);
- c. repeat this step, marking the initial contact each time to be assured of accuracy;
- d. grind the first premature contact and continue to make adjustments using a technique in accord with the physiological principles which will maintain harmony within the stomatognathic system;
- e. continue to lower the bolt and remove interferences in centric until an acceptable centric occlusion is achieved.

Lateral excursions are adjusted in the following manner:

- a. raise the bolt to free tooth contacts in lateral excursions;
- b. instruct the patient in making left and right lateral excursions;
- c. lower the bolt until initial contact is made and proceed to equilibrate lateral excursions;
- d. care must be taken to check the "balancing" or "non-working side" contacts, removing prematurities in this area as the working side is equilibrated.

* Note: The occlusal co-ordinator plays less and less a part as a balanced occlusion is approached. With the co-ordinator in place and the occlusion balanced, the teeth should contact exactly as they do without the appliance in the mouth; and when this occurs, harmony in the stomatognathic system has been achieved. In other words, the temporo-mandibular joints and the mandibular musculature, and not the teeth, have become the guiding factors in determining positional relations during the equilibration technique.

Summary

An occlusal co-ordinator is described which can be used to achieve occlusal harmony directly in the mouth prior to initiating the construction of a crown and bridge prosthesis. The importance of achieving occlusal harmony to prevent further trauma of the periodontia, temporo-mandibular joints and the remaining teeth is emphasized. Furthermore, this technique will help to ensure success of the prosthesis during its construction and after its insertion.

1. Contino, R.M. and Stallard, H., Instruments essential for obtaining data needed in making a functional diagnosis of the human mouth. *J. Prosth. Dent.* 7:66-77, 1957.
2. Jeffreys, F.E. and Platner, R.L., Occlusion in removable partial dentures. *J. Prosth. Dent.* 10:912, 1960.
3. Klecinic, E., Personal communication, U.S. Naval Dental School, Nov, 1967.

Studies completed in 1963 indicated that dentists had the highest mortality rate among professional men in the 45-54 age group and a high rating in the 55-64 age group.

- *Brit. Dent. J.* 123:465, Nov. 1967.

RESTORING CROWNS OF CLASP BEARING TEETH

Major Y Kamachi, BA, DDS

Introduction

A problem frequently faced by the dentist is the grossly decayed abutment tooth or a broken crown of an abutment tooth upon which rests an acceptable partial denture. In the past, usually the procedure of choice was to extract the offending tooth and add an artificial tooth to the partial denture, or extract the tooth and remake the partial denture. Another alternative was to restore the tooth with a pin supported amalgam and try to fit it to the clasp of the prosthesis. Under these circumstances, achieving an accurate fit and restoring the contact and contour of the original tooth is a most difficult procedure.

The treatment of choice is to make a cast or dowel crown for a non-vital tooth and remake the partial denture. However, the crown of a clasp bearing tooth can be restored with a great deal of accuracy and this paper gives a step by step description of a procedure utilizing Inlay Pattern Resin in a direct-indirect technique.

Inlay Pattern Resin

Inlay pattern resin is known by its commercial name "Duralay"*. It is a quick-setting cold-cure acrylic, which when used according to the manufacturer's instructions has proved to be clinically acceptable for making patterns. Each successive layer of acrylic added by the brush technique compensates for shrinkage of the previous layer. The final layer is overextended and trimmed flush with the margins with a burr or disc. Its hardness prevents fracture while checking the occlusion, and it will not distort when drawn from the tooth. Temperature changes do not affect it appreciably and the mould produced after burn-out is clean, smooth and without residue. It has many uses in crown and bridge prosthodontics including: patterns for inlays, full crowns, veneer crowns, gold cores for porcelain fused to gold, and dowels; impressions for crowns; and tying in the nylon pins for pinlays.

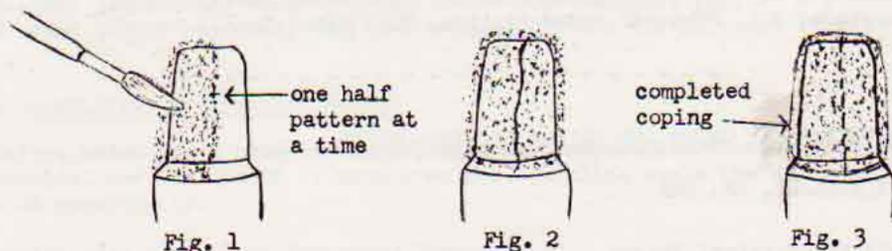
Technique

- a. The grossly decayed tooth is restored with a pin supported amalgam. The pin amalgam will serve as a core for a full veneer preparation. Courtade² recommends self-threading pins, as opposed to cemented and friction-locked pins.
- b. All non-vital teeth and those of questionable vitality are treated endodontically. If the root filling is restricted to the apical third of the root, preparation of the canal for a cast dowel will be minimal. When a cast dowel is used, ensure that it can be seated with finger pressure only. "Hammering" the dowel may split the tooth.
- c. A full veneer crown preparation is completed on the amalgam core or dowel.
- d. The gingival tissue is retracted with the retraction kit, hemodent, or zinc chloride treated cord. Before removal, two or three drops of 1/1000th adrenaline may be applied to the cord.
- e. Rubber base impression material is injected around the prepared tooth and the impression completed with the same material so that a working model of the arch can be prepared. The cast is poured in die material, using a Ney pin for the tail of the die of the abutment tooth.

Laboratory Phase

- a. The abutment die is cut out of the working model, trimmed, and then lubricated with inlay pattern resin lubricant.

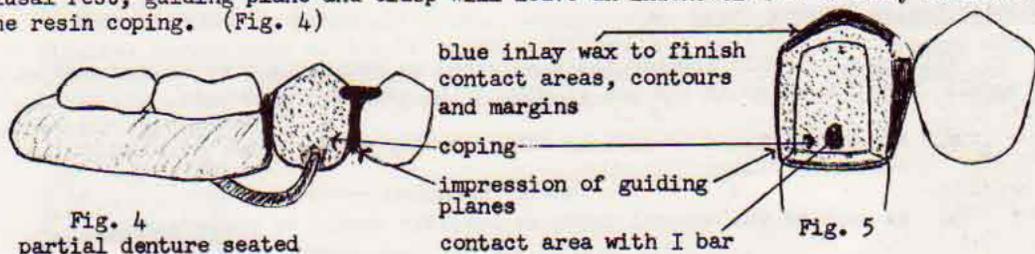
- b. A coping is fabricated on the die with inlay pattern resin, using the brush technique and applying the resin to one-half of the die surface before proceeding with the other half. Adding resin in this fashion prevents the pattern from adhering rigidly to the die. The resin is applied by moistening the camel hair brush in resin liquid, picking up a bead of powder on the moistened brush and applying it to the die. Dipping in hot water hastens the set of the resin.



Chairside Phase

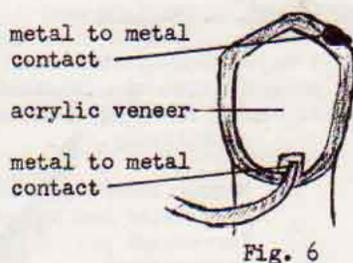
The pink resin coping is placed on the prepared abutment tooth in the mouth and it is built up by adding resin - using the brush technique.

While the resin is soft, the partial denture is seated in the mouth. The occlusal rest, guiding plane and clasp will leave an indentation or a shiny surface on the resin coping. (Fig. 4)



The coping is removed and trimmed to the margins of the die. It is then used as an index and base to which inlay wax is added to complete the wax-up for the crown. (Fig. 5) On returning the die and patterns to the working model the original contact and contour can be completed with inlay wax.

In completing the wax-up, it should be kept in mind that contact areas of the crown with metal areas of the partial denture framework should be restored in metal. If aesthetics so demand and if space is available, acrylic veneer can be provided for by carving retentive areas into the wax and resin.



The pattern is sprued, invested, and the crown cast.

In preparing the crown for cementation, all margins must be checked for fit and accuracy, including contact areas with clasps and rests, and also the relationship with adjoining teeth.

Finally, the crown is polished and cemented to place.

Summary

An acceptable partial denture resting on a grossly decayed or broken down tooth is commonly encountered. A simple technique is described in which the crown

of a clasp-bearing tooth is reconstructed, restoring it to its original relationship with the partial denture it supported. The method also permits restoration of the crown in relation to the remaining teeth.

*Duralay: "Inlay Pattern Resin", Reliance Dental Manufacturing Co.

1. Klecinic, E. Personal communication, U.S. Naval Dental School. Nov, 1967.
2. Courtade, G.L. Personal communication, U.S. Naval Dental School. Oct, 1967.

CHAIRSIDE TIPS IN CROWN AND BRIDGE PROSTHODONTICS

Major Y Kamachi, BA, DDS

Hyperplastic Gingival Tissue

Electro-surgery provides a most convenient method for removal of hyperplastic gingival tissue surrounding the teeth selected as abutments, and this can be done during the appointment for tooth preparation. The gingival tissue can be recontoured quickly with minimal bleeding and little discomfort to the patient. A minor objection from the patient's point of view is the odour created by the procedure.

Endodontically Treated Teeth

All endodontically treated teeth selected as abutments must be restored with a dowel. Cardinal rules in the use of dowels include the following:

- a. the dowel should be as long subgingivally as the final restoration is supragingivally;
- b. as much of the natural crown as possible should be preserved;
- c. the dowel must fit so that it can be placed by finger pressure;
- d. the cast dowel must be independent of the final restoration because each may have its own path of insertion.

Rubber Base Impressions

- a. Mixing heavy rubber base can be facilitated by using two glass slabs. The initial mix is started on the slab and then transferred to a second slab for final spatulation. This ensures a smoother, creamier mix with an even consistency.
- b. Rubber base impressions should be flushed with hydrogen peroxide, washed with water and dried with air before pouring the die material. The effervescent action of the peroxide rids the impression of blood and salivary debris.

Adjusting Full Crowns

In checking the fit of a full crown when the exact location of the interference cannot be determined, paint the inside of the crown with blue or red stencil correcting fluid. The dried stain will be rubbed off by areas of first contact which may then be judiciously relieved with a burr or stone, permitting the crown to be seated.

Checking the Occlusion

Dry the teeth thoroughly with gauze before using articulating paper because moist teeth will not mark adequately.

Removing Tight Fitting Crowns

The margins of tight fitting full crowns are easily marred on removal during try-in. In order to overcome this problem, wax two knobs onto the pattern - one on the buccal and one on the lingual surface free of the occlusion - before spruing and casting. These act as handles, permitting removal of the crown with hemostat forceps. When no longer required, they are trimmed off and the surfaces polished.



Fig. 1

Reducing Sensitivity of Prepared Teeth

Before cementing a crown or inlay, wash the preparation thoroughly with hydrogen peroxide, dry, and paint it with copalite. Copalite seals the dentinal tubules and reduces sensitivity.

Providing for Easy Removal of Temporary Crowns

Lubricate the prepared tooth with vaseline before cementing a temporary crown with temporary cement. On subsequent appointments the crown can be readily removed and the cement will not stick to the preparation. Most zinc oxide cements will set with vaseline incorporated into the mix.

Beading Temporary Crowns

When fabricating temporary crowns, whether they be acrylic or aluminium, bead the gingival margin with cold-cure acrylic to obtain a butt joint. Beading adds strength, makes the margins of the crown more acceptable to the soft tissue, and displaces tissue so that the margins of the preparation are more clearly visible on subsequent appointments.

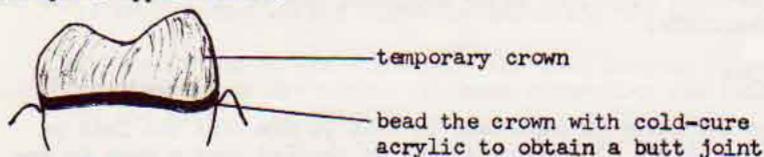


Fig. 2

Waxing Up Pinlays

In order to insure that nylon or metal pins will draw without danger of fracturing or distorting the wax pattern, "tie in" the pins with Duralay. Remove the pins, re-lubricate the die before replacing them and finish the pattern with blue inlay wax. The resin on the lingual surface is strong enough to permit checking the occlusion and can also be used to develop cuspal or incisal guidance before the wax-up is completed.

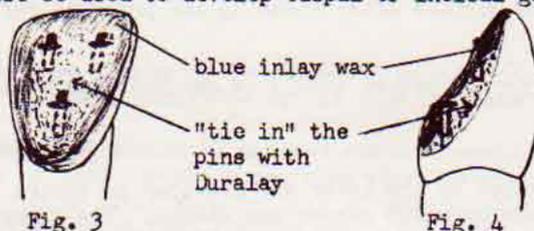


Fig. 3

Fig. 4

1. Johnston, J.F., Philips, R.W., and Dykema, R.W. Modern practice in crown and bridge prosthodontics. 2nd ed. Philadelphia, Saunders, 1965.
2. Klecinc, E.. Personal communication, U.S. Naval Dental School. Oct, 1967.

* Editor's Note -

Major Kamachi recently returned from a post-graduate course in "Fixed Partial Dentures" at the US Naval Dental School - Bethesda.

PREVENTIVE MAINTENANCE OF CHROME-COBALT EQUIPMENT

WO2 WD Morris, CD



Introduction

The Ticonium Company introduced its first electrical casting machine in 1934, and since then constant improvements in materials and equipment for casting chrome-cobalt alloy have found their way into the modern laboratory. The RCDC has been using chrome-cobalt alloy for dental appliance fabrication for over 17 years.

Equipment that is now considered standard and commonplace was not always so. It became necessary to design, adapt and modify in order to satisfy new techniques and methods, and undoubtedly this evolution of equipment will continue to make possible improvements in present day standards. As the demand increased, it became necessary to develop machines for casting chrome-cobalt more quickly and with greater accuracy, and at the same time remove the human element of judgement in reading the melt. The next step could well be "push the button and stand back".

The chrome-cobalt equipment in use in the larger RCDC laboratories is standard in operation, care and maintenance. Problems with the equipment are relatively few, but the points in this article regarding major equipment may be of interest and assistance to laboratory technicians.

The Ready Duplicator

- a. The felt strip on the cover is important in that it prevents the loss of water through evaporation. The cover should be checked once a week to ensure that it has a snug fit.
- b. When adjusting the thermostat for temperature, a clock-wise turn decreases the heat and a counter clock-wise turn increases it. $1/3$ turn = approximately 20°F . (The correct storage temperature is 135°F)
- c. In order to prevent the colloid from pitting and corroding the stainless steel inner container, a light film of silicone spray (available in 20 oz spray can) is applied to the surface after cleaning and prior to refilling with new hydrocolloid.
- d. The water level in the jacket should be checked once a week.

Pre-Heating Oven

- a. The three vent holes in the cover are provided to ensure a free circulation of air and a means by which gasses may escape. The floor of the oven is also provided with a vent hole. Prior to loading the oven, these vent holes should be checked for debris which might hinder circulation.
- b. The thermocouple protective tube should be checked frequently for corrosion at both top and bottom. Once the tube leaks because of corrosion, the gasses will attack the thermocouple and true readings on the pyrometer will not be obtainable.
- c. If the exhaust fan duct is provided with an extension that fits directly over

the oven cover, there must be at least one inch of air space between the top of the oven and the duct to allow air from the room to equalize the suction through the oven vent holes. The velocity of the fan must be sufficient only to remove the gasses and not cool the oven.

Dater Time Switch

- a. If the time switch fails to close the circuit as it has been set to do, the fault could lie in any of the following:
 - (1) incorrect setting of the clock;
 - (2) the electric power to the switch may be turned off at the panel;
 - (3) failure of the timer motor;
 - (4) failure of the contacts on the main contactor to close.
- b. Before calling for DEM Tech service, determine the cause if possible.

Casting Machine

- a. Lack of maintenance on the copper finger which rides on the copper rotor causes wear and in time both surfaces will become scored. This not only causes undue friction, but also a poor electrical contact.
- b. When maintenance is being performed on the casting machine, the condition of the small "pigtail" should be checked for any signs of break down. It is located above the copper rotor section and receives considerable flexing due to the rocking action caused by balancing the arm.
- c. The retaining screws which hold the long looping "pigtail" should be checked to ensure they are tight. A loose connection can introduce a large resistance in the electrical circuit.
- d. The part of the carriage which wears out most frequently is the "pigtail" assembly. If it is frayed, soft and spongy, it will greatly increase resistance and therefore should be replaced.
- e. When it is necessary to replace a mica washer or bushing, only the parts that are specifically designed for this purpose should be used. When necessary, the screw and washers in "kit form" should be ordered from the unit quartermaster.

Sand Blasting

- a. In order to prevent pieces of investment from plugging the sand tube, a screen in the shape of a ball should be placed over the tube end.
- b. The sand blaster bag should be emptied and laundered frequently. When the bag gets too full of sand, or the pores clog with investment dust, the effectiveness of cleaning is diminished because of back pressure. It is a good idea to have an extra bag on hand for use while the dirty one is being washed and dried.
- c. The sand blaster should not be overloaded with zircon grit since an excessive amount of abrasive can cut down operating efficiency.
- d. The correct size of inner and outer nozzles should always be used and the air supply kept dry by checking the condensation in the compressor.

The Automatic Spindle

- a. When a replacement spindle is received from unit QM, grease may have settled to the lowest point in the ball races. When first put into operation, the resulting unbalanced condition will cause overheating. It is therefore recommended that when the new spindle is installed, it should be run for a short time and checked for rapid overheating of the spindle body. If it overheats, by repeatedly stopping the motor and allowing the spindle to cool, the grease will be equally distributed in the ball races.
- b. The chuck must always have a mandrel in its jaws when the chuck release lever is in the "run" position. This prevents the head of the chuck from being drawn back too deeply into the nose cone. When the chuck is drawn back into the nose cone and is in the locked position, if the motor is turned on, the spindle will not turn and the friction developed from belt slippage will cause spindle overheating.
- c. At the end of the day it is a good practice to unscrew the collet, wipe it clean and put one drop of oil (not 3 in 1) on the threads. Wipe off the excess oil and re-insert the collet.
- d. The body of the spindle is egg-shaped. If the belt stretches so that it starts to slip, additional tension can be provided by rotating the body in its holder. Too much tension will cause pulley wear, but insufficient tension will cause loss of power and heat from friction as the belt slips.
- e. The belt should be removed once a week and both pulleys checked for cleanliness. Deposits on the pulley can cause belt slip or vibration and this can damage the shaft and bearings.

Conclusion

The foregoing maintenance tips will eliminate many of the maintenance and repair problems that commonly cause equipment breakdowns. If steps are taken to prevent these problems from occurring, the saving in labour, materials and money will justify the time spent on constructive preventive maintenance.

FILLING THE ROOT CANAL SILVER CONES

Major DH Skinner, CD, DDS



Countless hours spent in the fabrication of fixed and removable prostheses can be saved by adopting the simple expediency of endodontic therapy which has rapidly gained acceptance as a treatment of choice.

The advent of the silver cone as a means of filling the root canal has undoubtedly been a factor in promoting increased interest and success in endodontic

therapy. In the hands of the average practitioner it is easier to use than gutta percha cones, particularly for posterior or multirrooted teeth.

Technique

Having completed filing the canal a silver cone of suitable size is selected. Using grooved tip cotton forceps it is seated firmly in the canal.

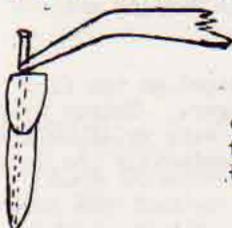


Fig. 1

The cone is grasped firmly with the forceps at the occlusal or incisal level, removed from the tooth and checked against the established length (i.e., the incisal or occlusal edge to the apical constriction).

If the cone is short, the canal is flooded with sodium hypochlorite solution and refilled until it can be seated to the established length.

If more than 1mm too long when seated, the cone is removed from the canal and the excess cut off the apical end.

When the cone has been seated to the correct depth, the incisal edge of an anterior or the cusp tip of a posterior is used as a reference point and the butt end is cut off at that level.



Fig. 2

silver cones cut off level with incisal or occlusal surface.

Trial Radiograph

The trial radiograph may indicate one of the two following conditions which will require adjustment:

- a. silver cone short of the apex

In this case, the length of the cone and the distance it is short of the apex is recorded. Then, beginning with a #15 file and with a marker set at the new length, the canal is filed until the cone can be properly seated. The butt end of the cone should now be apical to the incisal or occlusal reference point by the same distance it was formerly short of the apex.

- b. silver cone extending beyond the apex

When the radiograph indicates that the silver cone extends beyond the apex, the excess is removed from the apical end and the cone reseated firmly. The cone should still be level with the incisal or occlusal reference point, the next larger size cone should be selected, seated and the procedure repeated.

In the case of multirrooted teeth, all silver cones should be cut off at the

same level so that corrections may be made using the other silver points as reference points.

Sealing the Canal

When the cone has been adjusted to the correct length the canal can be sealed. It should be irrigated and dried thoroughly. The sealer is mixed on a slab and the cone is covered with paste and seated in the canal. One or two pumping motions aid in thoroughly coating the walls with sealer.

A small amount of gutta percha temporary stopping is placed on the floor of the pulp chamber and packed around the cone with a warmed plugger. Excess sealer paste is wiped from the chamber with a cotton pellet moistened with xylol. A mixture of zinc phosphate cement is then placed in the chamber to approximately the depth of an occlusal or lingual cavity preparation.

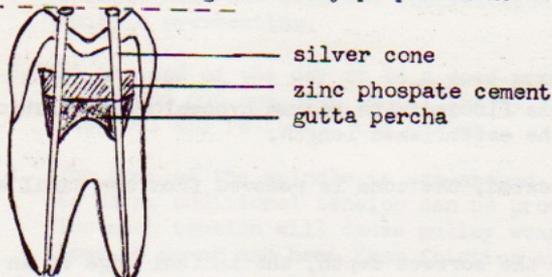


Fig. 3

Combination Filling

Many anterior teeth and bicuspid are filled with a combination of silver and gutta percha cones. The procedure is the same as that already described, except that after the silver cone has been sealed with the sealer paste, fine gutta percha points are condensed along the cone to completely obliterate the canal.

When should gutta percha points be added? A simple test is by placing the #3 Kerr Spreader (used for lateral condensation) into the canal after the cone is seated. If the spreader can be inserted one half the length of the canal, then gutta percha cones should be condensed along side the silver cone. When they have been placed and condensed, a heated instrument (spoon excavator) is used to remove butt ends. The gutta percha is then condensed around the silver cone on the floor of the chamber, cement is added and the cone cut as before.

Notched Silver Cone Technique

When a dowel restoration is necessary or anticipated, the notched silver cone technique is indicated. The procedure is carried out as described previously, except that after the trial radiograph has been taken and the canal is ready to be filled, the silver cone is notched with a disk at the point at which it is to be severed in the canal - usually equidistant to the crown length. The cone is notched around its entire circumference and then seated with sealer paste into the canal. The butt end is grasped with forceps and twisted, pressure being maintained in an apical direction. The twisting severs the cone and the apical portion remains firmly seated.

When a restoration is not considered immediately, the remainder of the canal must be sealed with gutta percha points. At a future date when the dowel restoration is started, the gutta percha filling can easily be removed.

Conclusion

Silver cones simplify endodontic therapy and the technique described ensures controlled accuracy in seating and sealing them.

PORCELAIN FUSED TO GOLD

Major AG Taylor, CD, DDS



Introduction

Early attempts to use porcelain as a veneering material for fixed protheses attained only limited success. In the 1930s Swann¹, Flecher² and Hovestad³ developed techniques for the construction of porcelain bridges which utilized metal reinforced substructures. Many of the problems experienced with the use of porcelain during this period have been solved or minimized with the development of improved techniques and materials in the past decade. Various "matched pairs" of porcelain and casting metal have made it possible for the average operator and laboratory technician to anticipate a very satisfactory result with the use of improved materials including: Ceramco, Thermolite, Micro Bond, Nobil Bond, Stern's Metal and Ticon.

Problems

The basic key to any porcelain-precious metal restoration is the compatibility of the porcelain to the metal in terms of linear coefficients of thermal expansion. The two coefficients of thermal expansion must be within $\pm .01\%$; that of the porcelain has deliberately been made slightly lower than that of the metal to put the porcelain in a slight state of compression. In a state of compression, porcelain is at its strongest.

The porcelain of one matched pair should never be used with the metal of another manufacturer. If, for instance, one attempted to veneer Thermolite metal with Ceramco porcelain, craze cracking would be a likely result due to the unmatched coefficients of thermal expansion. Under these circumstances a second undesirable result is that a noticeable difference is seen between the fit of the casting before and after veneering with the porcelain.

Until recently a characteristic of porcelain gold was its sensitivity to creep during firing of the porcelain. It is the nature of these metals to change shape or sag under load at a temperature two or three hundred degrees below the melting point. Ceramco has developed a sag resistant metal, SR 165, which when supported every $\frac{1}{2}$ inch over the length of the restoration during the firing cycle overcomes the problem of sag.

The metal substructure of porcelain fused to metal bridges must provide a greater degree of rigidity than is required with the use of other materials. The slightest amount of flexion will cause cracking in porcelain veneers. Pontics and connecting joints must be designed with sufficient metal bulk to make them completely rigid.

Much has been written concerning whether or not occlusal surfaces and tissue contact areas of pontics must be veneered with porcelain. Mumford⁴ advises that of importance is not the type of material that contacts the tissue, but rather the

Editor's Note

This is the third article in a series written by members of the team of RCDC personnel that visited the JF Jelenko Company at New Rochelle, N.Y. to observe the Company's research and development program associated with the porcelain bonded to gold technique.

amount; and that minimal contact with well polished gold is just as acceptable to the tissues as is porcelain. When the occlusal surfaces and ridge contact areas of the pontics are covered with porcelain the metal bulk is reduced sufficiently to permit flexion. Since an unyielding framework is a basic requirement in the use of porcelain fused to metal in fixed prostheses, it is recommended that occlusal surfaces and tissue contact areas of pontics be constructed of metal.

All connecting joints between pontics and retainers must be kept as large as possible to prevent flexion. While incorporating large solder joints in the pursuit of framework rigidity one must not make these joints so large as to become biologically unacceptable.

The esthetic problem with any veneering material is the dead opacity of the underlying metal. Light reflections from this opaque surface make the shade matching in a veneer an entirely different problem from the reproduction of colour in straight porcelain jackets. For this reason incisal edges and buccal cusp tips are reproduced in porcelain to approximate more closely the translucency of the all-porcelain jacket.

The porcelain has an opaque undercoat which is identical to the overlying porcelain except that the undercoat contains a large quantity of opaque metallic oxide. This opaque coat is enhanced in colour if the metallic surface is first coated with a layer of pure gold⁵. The metal has a gray hue which reflects through the porcelain. The application of the gold coat changes this reflection to a delicate light yellow.

Some manufacturers recommend these matched porcelains for all-porcelain jacket crowns. The aluminous porcelains now available are two to three times stronger than regular dental porcelains and are therefore better suited to this purpose. Even the aluminous porcelains, however, are not strong enough to replace porcelain fused to metal for fixed prostheses construction.

Nature of the Porcelain to Gold Bond

There are three possible sources of the bonding forces: wetting bond, chemical bond and mechanical bond.

The wetting bond, such as exists between two glass slides with a film of water between, is obtained simply by making sure that the metal surface is wetted by the porcelain. Wetting accounts for approximately one-third of the overall bond strength.

Chemical forces developed at the interface are attributed to the trace elements present in the alloy. These trace elements appear to penetrate about 10 microns into the porcelain to form oxides which dissolve in the porcelain during firing, thus forming a new substance at the interface. The shear strength between the porcelain and metal can be largely attributed to the chemical bond.

The significance of the mechanical bond gained by roughening the metal surface was found by Nielsen to be negligible⁶. An increase in bond strength of 13 to 15 percent was attributed to roughening of the gold alloy surface by Lavine and Custer⁷.

The shear strength of the bond between fused porcelain and gold with matched coefficients of thermal expansion exceeds 12,000 PSI. Since the shear strength of porcelain is about 6,000 PSI, it is evident that the bond between the alloy and the porcelain is stronger than the porcelain itself. The tenacity of the porcelain fused to metal bond is such that fractures occur within the porcelain rather than at the interface.

Conclusion

The need for a veneering material more durable than acrylic has been apparent

by the number of failures encountered with the acrylic veneer. Many of the problems associated with the use of acrylics and early metal reinforced porcelains have been overcome in the development of porcelain fused to metal materials during the past decade. The porcelain-metal combinations now available are fine, workable, and practical dental restorative materials.

1. Swann, H., Torque resisting porcelain bridge. Chicago Dental Convention, 1931.
2. Flecher, F.R., Platinum reinforced porcelain restorations. Dent. Digest, 43:24, 1937.
3. Hovestad, J.F., Porcelain bridges. Dent. Items Int., 58:239, 1936.
4. Mumford, G., Personal communication, Montreal Dental Club, Nov. 1967.
5. Hoffman, E.J., How to utilize porcelain fused to gold as a crown and bridge material. Dent. Clin. North America, 57-64, Mar. 1965.
6. Nielsen, J.P., Ceramco Manual No. M-104, J.F. Jelenko Co., New Rochelle, N.Y.
7. Lavine, M.H. and Custer, F., Variables affecting the strength of bond between porcelain and gold. J. Dent. Res., 45:32, Jan.-Feb. 1966.

The RCDC News

Corps Conference

The 18th Annual DGDS Study Period and Conference was held in Ottawa 5-7 Dec 67. The meetings were chaired by Col LG Craigie.



Seated L to R - Col JW Turner, Brigadier BP Kearney, Col LG Craigie
Standing L to R - Col CM Cornish, Col GC Evans, Maj JVP Chatwin, Col SG Bagnall, Lt-Col JW Fletcher, Col GR Covey, Lt-Col WH Harrington, Col RHG Cunningham, Capt E Clark, Lt-Col WW Anglin, Maj CA Casterton, Lt-Col LR Pierce, Lt-Col WR Thompson, Lt-Col G MacDougall

Annual Corps Association Meeting

Brig BP Kearney and Lt-Col G MacDougall attended the Annual Meeting of the Royal Canadian Dental Corps Association held in Ottawa 9 Dec 67.

Queen's Honorary Dental Surgeons Appointed

The Department of National Defence has announced the appointment of Colonel GR Covey, MBE, CD and Lt-Col MJ Snidal, CD as Queen's Honorary Dental Surgeons. Both appointments are for tenure of office.



Col GR Covey, MBE, CD, DDS
Commandant RCDC School
Camp Borden, Ontario



Lt-Col MJ Snidal, CD, DDS
Regional Militia Dental Adviser
Prairie Region, Winnipeg

Division News

Visits and Inspections

Col LG Craigie, Lt-Col WR Thompson and Maj CA Casterton visited Nos 13 and 15 Dental Units, the RCDC School and No 1 Dental Equipment Depot during the period 22 Jan-9 Feb to familiarize RCDC personnel with current trades training policies.

Special Events

The Christmas party was held at the Sr NCOs' Mess, HMCS Carleton, on 15 Dec 67. Those attending included all RCDC military and civilian personnel in the Ottawa area.

Retirement

Lt-Col "Al" Brusso has retired from the Forces after 28 years of service with the Corps. He enlisted in 1940, came up through the ranks and was commissioned Lieutenant (QM) in 1944. Prior to coming to the Division as Senior Procurement Officer he was Commanding Officer of No 1 Dental Equipment Depot. Best wishes go with Al as he commences a new career with the Federal Department of Energy Mines and Resources in Calgary, Alberta.



Brigadier General BP Kearney
presents the Corps Crest to
Lt-Col AW Brusso on his
retirement

11 Dent Unit

Special Events

All RCDC personnel in the Victoria area attended a Christmas party and dinner dance at the Oak Bay Marina on 15 Dec 67. Suitable presentations were made on behalf of all ranks to WO2 Gourlay and Cpl Sharp, the former retiring after many years of service and the latter on release. The presence of Lt-Col GE Shrage, Maj FM Murray and Miss May Warnock lent a great deal of nostalgia to the occasion.

Cpl North RC Dent Assistant CFS Whitehorse received his promotion under rather odd circumstances. The CO of the Station decided that the occasion of the Sgts' at home to the Cpls would be most appropriate, but since no army stripes were available, airforce stripes were deemed suitable. Thus, with blue stripes an army private became corporal in a Sgts' Mess on an airforce station.

Sports

Capt McRae of CFB Comox and his partner won the Zone 1 BC Badminton Championship in December. Capt McRae also was runner up in the singles competition.

Sgt "Scotty" Walker was a member of the CFB Edmonton Soccer Team which won the Canadian Forces Soccer Championship, held in St Jean Que, Oct 10-13, 1967. It was an all-Western final, with Edmonton squeezing out HMCS Naden 2 to 1.



CFB Edmonton Soccer Team after final match. Sgt Walker first left of trophy.

Retirements

Two "long time members" of the Corps are joining the ranks of the retired.

Major "Larry" Kelly enlisted in the Active Force in 1940, transferred to the RCAF in 1941 and served as a "blue job" until 1946. After completing his course in Dentistry he was commissioned in the RCDC in 1956. It is believed that Larry will be establishing a dental practice in Chilliwack, B.C. Best wishes are extended to him in this endeavour.

WO2 "Perce" Gourlay has had 28 years of service with the Corps. Having served in a great variety of postings and as a dental assistant with innumerable dental officers during that long period, needless to say Perce is well known throughout the Corps. It is believed that he is retiring in Victoria, B.C. and best wishes go to him and his family from his many friends.

12 Dent Unit

Special Events

During October the dental clinic at CFB Galetown was visited by 200 officers from the Canadian Forces Staff College. For this occasion a mobile dental van was set up and manned for display.

A very pleasant Christmas party was held in the form of a supper dance in the Gorsebrook (Halifax) Recreation Hall on 15 Dec 67. Besides those from Halifax there were five couples from Cornwallis and two couples from Greenwood in attendance. Special guests included Col AT Roger and Sgt DLG Flesher.

It was reported from CFB Cornwallis that WOL Shiner organized the pre-Christmas Annual Turkey Shoot for the third successive season. Strangely enough he has "won" a turkey each time. Obviously, he's an expert in this field of endeavour.

An interesting item from the Gagetown clinic with reference to the 30.9 inch snowfall on 4-5 Dec stated: "The drifts were wondrous to behold and many cars were completely buried."

13 Dent Unit

Special Events

Lt-Col JM Smith and Maj HG Bunston attended the laying of the corner-stone of the Dental Science Building, University of Western Ontario, on 20 Oct 67.

Appointment of Interest

Dr WR Cunningham has been appointed Director of the School Dental Service in London, Ontario, succeeding the late Dr HL (Hum) Harris.

14 Dent Unit

Conferences and Meetings

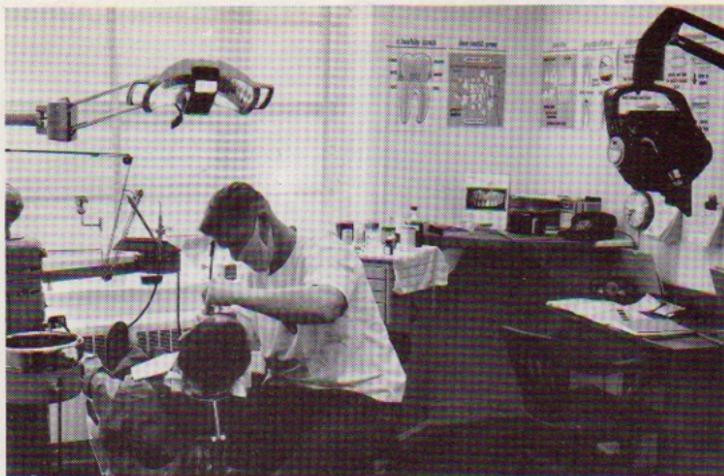
Major General Robert B Shira, Chief US Army Dental Corps, was guest lecturer at an all day meeting of the Alpha Omega Dental Society of Winnipeg - 4 Nov 67. All RCDC dental officers in Winnipeg and the outlying areas were in attendance.

Accommodation

No 11 Dental Clinic CFB Moose Jaw has taken on a "new look" since the completion of renovations. It is located in the Base Hospital and it is designed for efficiency. It contains three spacious operating bays and a separately located bay for the dental therapist. No 11 clinic staff invite RCDC personnel who might be passing through Moose Jaw to have the "conducted tour" of the new clinic.



No 11 Dental Clinic Staff
L to R - Sgt LH Pion, Sgt
RB Johnson, Maj JJB Houde,
Capt FH Harreman, Sgt G
Shechosky, Cpl BG Bristow



Sgt RB Johnson, Dental Therapist, at work in his operating bay

Special Events

The Unit Christmas party was held at CFB Winnipeg 15 Dec 67 with 89 in attendance. Everyone enjoyed the sociability of friends, good food and good music.

Capt JA Boucher has been elected Mayor of the PMQ Council of Pinemuta Park, CFS Gypsumville, Manitoba.

15 Dent Unit

Special Events

On the evening of 11 Dec 67 the RCDC officers in the Montreal area hosted the All Ranks Christmas Party at the Social Centre, CFB St Hubert. The Master Chef, Colonel Cornish, carved a large turkey and was the good humour man of the evening. Capt Charron and his orchestra supplied the music for a well attended evening of dancing and gaiety.

1 Dent Unit

New Equipment

In pilot studies being undertaken by the Corps, both Pyroplast and Ceramco equipment have been installed in the ceramics laboratory at No 1 Clinic CFHQ. The first Pyroplast crown was fabricated on 19 Dec 67 with good results.

In the near future a porcelain bonded to gold service on a limited basis will become available to dental officers throughout the Corps. Units will be notified regarding details of its availability.

1 Dent Eqpt Dep

Special Events

On 15 Dec 67 the personnel of 1 DED and No 3 Dental Clinic had a very successful Christmas party.

On 20 Dec 67 the children's party was held with Santa Bob Mills once again doing the honours.

The RCDC School

Training

Dental Assistant Pay Level 3 Course - 10 Oct-8 Dec 68



Front row L to R - Cpl Braslins IA, Cpl Jack A, WO1 TL Batten, Lt-Col Andrews, Col GR Covey, Maj JN Wright, Sgt Fathers GN, Cpl Hatcher LR

Centre row L to R - LAW Audet MFE, Cpl Swiatkevich VH, AW2 Kidd LC, AW2 Tucker BR, AW2 Lemoine BA, Cpl Hache MJV, AW2 McEllistron SAF, AW2 Morton GD, AW2 Kent ME4, AW2 Cook MA, LAW Acres CJ

Back row L to R - Ptes Muir JA, Clarke RM Cpl Armstrong PJ, Ptes Morphett DJ, Calnen RD, Mr DJ McDonnell, Cpl Parent TJ, Ptes Allen DG, Dale JE, Cooper TJM, Eden DM

Dental Laboratory Technician Pay Level 4 Course - 28 Aug-15 Dec 67



Front row L to R - Sgt Hossdorf J, Lt-Col AG Andrews, Col GR Covey, Lt-Col PS Sills, Capt DD Robertson, Sgt Rothwell KS

Centre row L to R - Cpls Lindsay RS, Walker JM, Pte Cloutier JRA, Cpls Tallack RJ, Renwick WH, Pte Arbour JMM

Back row L to R - Cpls Timmers PAG, McKenzie JN, Maelde P, Feeney DC, Anderson GM, Taylor TH



Seated L to R - Maj NH Andrews; Lt-Col AG Andrews; Maj AG Taylor
Standing L to R - Capt RB Andrews, Capt JO Strom, Capt WG Ebert, Capt JR Cowan, Capt ICM Wambara, Capt JR Robertson

Conferences and Meetings

The Kente Chapter of the Academy of General Dentists from the Bay of Quinte District held its Fall meeting at the RCDC School with 20 members in attendance. A familiarization tour of the facilities was followed by a series of clinical presentations by members of the staff.

Lt-Col AG Andrews presented a paper entitled "The Role of the RCDC Dental Officer in a Mass Casualty Care Situation" to the Federal Provincial Directors of EMO 13 Oct 67.

Training Assistance

WO2 Morris WD provided training assistance in equipment maintenance on 2 Nov for 25 civilian dental nurses who are attending a night course in Barrie, Ont. This course is under the auspices of the Muskoka, Grey and Simcoe Dental Society and is headed by Dr Bruce Hudgins of Alliston, Ont. All were most appreciative of the assistance given by the RCDC School.

On 24 Nov 67, Dr OP Sykora, Associate Professor of Partial Denture Prosthodontics at the Dental Faculty of McGill University, presented an afternoon program to the Officers Clinical Course on "Treatment Planning".

Special Events

The Dent A class held a "hope-I-pass" party for the staff in the Base Social Centre on 29 Nov. The inclusion of the female element in the course added considerably to the success of the party.

The officers held their Christmas party for all members of the RCDC School on 20 Dec 67.

4 Fd Dent Coy

Conferences and Meetings

Lt-Col Protheroe visited No 4 Fd Dent Coy 22-23 Nov 67 and addressed the professional study group on "clinic management".

The regular professional study group meeting was held in Fort Henry on 13 Dec. Capts Swanzey and Hill led discussions on preventive dentistry based on Admiral Kyes' paper entitled "Three Ways to Beat the Nation's Dental Problem: Two Good Old Nags and a New Charger". Maj Deyette also addressed the group - on Laboratory Services in the RCDC.

On the same date the NCO study group met, with Sgt Wylie addressing the group on Administration. The meeting took the form of a question and answer session.

The USAEUR Dental Conference was held in Garmisch, Germany 5-7 Oct 67. Lt-Col Richardson, Maj Deyette and Capt Hill attended.

Sports

No 4 Field Dental Company have been allocated two sheets of curling ice every Tuesday afternoon for their unit sports program. Good use has been made of this ice time to prepare four rinks to meet a challenge from 35 Field Dental Unit.

Capt Swanzey - Judo Champion

Capt AN Swanzey was a member of the 4th Canadian Infantry Brigade judo team which competed in British Army on the Rhine judo individual and team championships. He was winner of the individual light heavyweight competition.

Capt Swanzey was also a member of the nine-man Canadian team which participated in the International Military Judo Championships in Ostend, Belgium. Part of the report by Capt Swanzey on that event follows.

The tournament was sponsored by the International Military Sports Council, an organization of 40 member countries set up to promote and administer sporting activities among the Armed Forces of the World. The Belgian Armed Forces hosted the tournament in the city of Ostend and teams from six countries competed.



Capt Swanzey (right) in action

Off the mats, we were well taken care of. Accommodation was excellent, and the Belgian cuisine made mealtime a treat. Following the competitions, tours of the area, including Ypres, Bruges, and Brussels were organized by our hosts.

One of the Council's objectives is fostering international goodwill through sporting activities and in this context the judo tournament was a rousing success.

Special Events

4 Fd Dent Coy held its Christmas party in The Old Red Patch Club in Soest on 19 Dec 67. The entertainment members of the NCO Study Group made the arrangements for this excellent and successful party.

35 Fd Dent Unit

Treatment

A dental team comprised of Maj JLY Cyrenne and Cpl MN Boles provided treatment for service personnel and dependents at AWU in Sardinia during the period 3-17 Nov 67.

Accommodation

The newly renovated clinic at 4 Wing, Baden Soellingen, was officially opened by G/C Allison, Co of 4 Wing on 10 Nov 67.



G/C Allison cutting the ribbon

L to R - Cpl F Schmaltz, W/C Murphy (CADO), S/L Kelly (WCLO), Maj Legendre (Sr Dent O), S/L Berry (SMO), G/C Allison (CO), Capt Cooper (DO), Lt Carrier, Cpl J Patterson

The official opening was followed by an informal party which was attended by the clinic staff and members of the RCAF who had contributed to the new clinic.

Special Events

One of the highlights of social life in 35 Field Dental Unit this year was the Mixed Christmas Party held on 9 Dec in a Gasthaus near 4 Wing. 58 persons enjoyed a dinner-dance complete with "live" music. In the German tradition St Nickolaus and Black Peter made an appearance and everyone attending received a gift from St Nick and some a piece of coal from Black Peter for "misdemeanours" during the year.

Dent Det Cyprus

The following word picture of life with the Canadian Contingent in Cyprus was submitted recently by Capt JG Thompson, OIC Dental Detachment. -

The beautiful Island of Cyprus is in the midst of its rainy season - converting the great stretches of barren brown to refreshing green. Until last month, the lack of green had seemed overwhelming since leaving Canada. Even the towns have taken on a festive air with gaily coloured yards of orange, lemon, grapefruit and tangerine trees loaded with ripe fruit, interspersed with large bushes of brilliant poinsettias.

But who said to leave the winter gear behind? All buildings have been supplied with portable propane heaters. The dental clinic failed to get one at first. After the second day of temperatures in the high thirties, with each instrument feeling like an elongated piece of ice, the clinic was closed for a day until a heater was supplied. Outdoor temperatures range from near freezing at night to crisp sunny

days. But occasionally a warm spell of two or three days comes along with 70 degree sunny warmth - ideal for tennis. New Year's Day was one just such as that.

The Canadian Dental Detachment has entered into a variety of activities as a group. Capt Thompson, Sgt Bleakney and Cpl Beauchamp have visited dental clinics in the Austrian Field Hospital, the Danish Contingent and the British Sovereign Base Dhekelia. The British, of course, have extensive accommodations. The Austrian dentists returned the visit and enviously expressed praise of our large, bright clinic and lab. The Danish set-up is fairly rudimentary, being composed of a field kit (without airtor) in a hospital room. The liaison between different nationalities has been very rewarding.

Using the Finnish sauna bath is a social activity, and during these cool evenings closely resembles the true Scandinavian sauna. In the early fall before the weather turned cool we swam and made use of the many beautiful beaches. One can swim on the north shore of the Island - the water temperature being fine but the air freezing. The Island is also a treasure of beautiful scenery which is ideal for the camera enthusiast.

The political and military situation became very tense in Cyprus toward the latter part of November. The disarmament of UN personnel at Ayios Therodorus and Kiphinou by the Greek Nationalists, and the ensuing massacre of Turkish Cypriots created a situation in which we expected an invasion from Turkey at each sunrise for about a week. All personnel were confined to camp and a full working day, seven days a week, was enforced. Everyone was tense but resolute and ready for the worst. Preparations were made for refugees but fortunately were not required. Each morning at dawn many alarm clocks went off, but with no sounds of planes, an uneasy sleep was continued. Then, as quickly as it arose, the gravity of the situation subsided mainly through the efforts of Mr Cyrus Vance. Downtown Nicosia, which had been practically deserted, filled with pre-Christmas shopping crowds of local citizens and servicemen, happy that their two-week confinement had ended. Most bans have been lifted now and travel is back to normal. A spirit of relief with hope for a peaceful future is generally felt.

Professional Training

RDCD School - Canadian Forces Base Borden

Officers Clinical Courses

Removable Partial Dentures - 15-28 Nov 1967

Majs CL Gullekson, HK Meisner; Capts CJM Boston, DNH Charles, JPDC Grise, HJ Nadeau

Operative Dentistry - 10-23 Jan 1968

Capt W G Ebert, JR Robertson, IC Wambara, RB Andrews, JR Cowan, JO Strom

Periodontics - 1-14 Feb 1968

Majs JJ Walker, JFA Marcil, JCRR Roy, NH Andrews, JJB Houde; Capt RE Warren

University of Michigan, Ann Arbor, Michigan, USA

Maj DH Skinner - Endodontics - 27 Nov-8 Dec 67

Capt HA Pankratz - Interceptive Orthodontics - 29 Jan-2 Feb 68

US Naval Dental School - Bethesda, Maryland, USA

Capt JD McCallum - Oral Surgery - 15 Jan-1 Mar 68

Capt GS Zwicker - Oral Surgery - 15 Jan-19 Jan 68

Capt EH Harreman - Oral Pathology - 8 Jan-12 Jan 68

ENT Air Force Base - Colorado Springs, Colorado, USA

Maj WR Collier - Oral Surgery - 15 Jan-26 Jan 68

Cdn Forces Staff Course - Toronto - 11 Sep-15 Dec 67

Capt PR McQueen

Training

RCDC School - Canadian Forces Base Borden

Dental Laboratory Technician Level 6 Course - 8 Jan-23 Feb 1968
Sgts McCurdie HM, Borden EB, Hughes DC, Davies DJ, Forsythe C

No 1 Dental Equipment Depot - Canadian Forces Base Petawawa

Conversion Course Dental Storeman Group 3 to DEM Technician - 8 Jan-29 Mar 68
SSgts Strub AL, Jermain EA, Green AH; Sgt Schmelzle CE

JF Jelenko Co., New Rochelle, NY, USA

Ceramco Porcelain - Gold Techniques - 27 Nov-1 Dec 67
Sgt Hill WE

Ritter Training School, Rochester, NY, USA

Ritter Equipment Course - 6-10 Nov 67
WO2 Stewart RG; Sgt Pozyluzny SD; Cpl Boulianne JAL

Welcome to the Corps

A cordial welcome is extended to the following personnel who have recently joined the Corps:

AW1 Brayton JE; LAW Boucher RM; Cpls Daniels MM, Gilkes BA, Overbye IA; WO Janz SM, WO Manuge TD; Mrs Kelso, Mrs Mantle, Mrs Byrne

Promotions

To Lt-Col - JW Fletcher
To WO2 - Smallshaw KJ, Marchand JF
To SSgt - Jermain EA, DeBlois JRA, King HC, MacPhee JG, MacDonald JG, Pozyluzny SD, Peterson PD, Green AH, Neill RA, Hossdorf J
To Sgt - Hill JG, Garnham RA, Lindsay RS, Hardy DH, Davies DJ, McKinnon HJ, Veinot RD
To Cpl - North RC

Retirements and Releases

Majors PP Morin, LE Kelly; Lt-Col AW Brusso; WO2 Gourley FI; Sgt Wilkinson GW; Cpls Sharp HB, Horne WD, Palmer WG, Burns AM; Pte Baxter HE; AW2 Dirkson RJ; Miss MF Roberge, Miss A Loucks; Dr H Brown (Pt 5)

Vital Statistics

Marriages

Sgt Olynyk W to Miss MJ Hache; Sgt Bussieres PR to Miss F Parent; Cpl MacGillivray HJ to Miss Carolyn Fales; Pte James TA to Miss Wendy Patricia Adams, Pte Brophy GL to Miss Nancy Peters, Pte Hurley AD to Miss Laura Louise Beaupre, Pte Dale JE to Miss Beverly Joan Derkson

Births

Son - Major & Mrs TC Gaudet, Major & Mrs JJB Houde, (adopted); Capt & Mrs WD Fiolek, Capt & Mrs DL Poy, Capt & Mrs NS Misura, Capt & Mrs MB Fisk, Capt & Mrs ED Cragg, Capt & Mrs JAAL Carrier; Sgt & Mrs A Pink, Sgt & Mrs B Hannay; Cpl & Mrs NL Highfield

Daughter - Capt & Mrs AJC Gagnon, Capt & Mrs JHGR Charron, Capt & Mrs JWC Walls; Cpl & Mrs RC Wormington, Cpl & Mrs A Busse