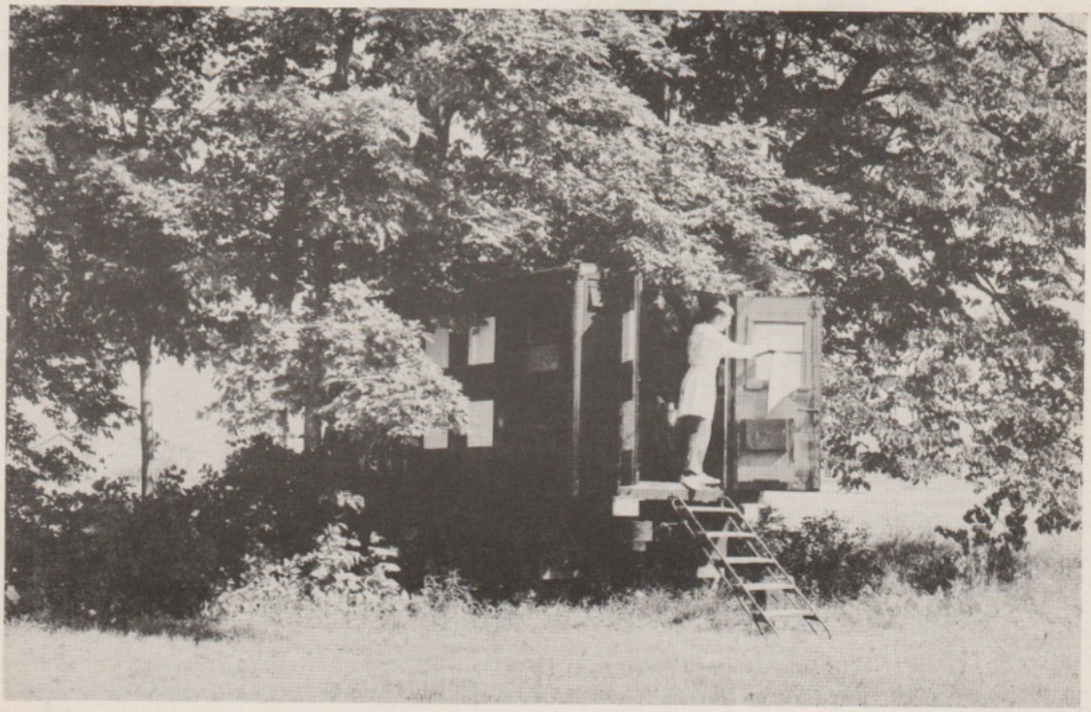
The ROYAL CANADIAN DENTAL CORPS Quarterly



VOLUME 8 NUMBER 3 OCTOBER 1967

Table of Contents

The RCDC Quarterly

Published by authority of Brigadier BP Kearney, Director General of Dental Services for the Canadian Forces

Editorial Board: Col JW Turner
Lt-Col G MacDougall
Major JVP Chatwin

Subscription Rates

The RCDC Quarterly may be subscribed for at $4.00 per year by writing to:

Director General of Dental Services
for the Canadian Forces,
Canadian Forces Headquarters,
Ottawa 4, Ontario.

Cover Photograph

Third Phase DOTP "in the field"
Meaford, Ontario, July 1967

A VISIT TO REMEMBER

Lt-Col JC Brick, CD, DDS

1967 is a year of anniversaries of famous battles and battlefields in Europe. This spring saw the fiftieth anniversary of the Battles of Verdun, Vimy Ridge, Passchendaele and other familiar names of the First World War. In August, Canadians revisited the scene of the Dieppe Raid on the occasion of its 25th anniversary.

The ceremonies were attended by an official party representing the Canadian Government; a Department of Veterans Affairs group consisting mainly of a member from each of the units that took part in the raid; and forty-five Regular Force personnel, whose group was labelled the "Serving Survivors Contingent". In addition many regimental associations chartered planes and brought more than one hundred other veterans of the raid back to the scene.

The author, as a former officer of the Essex Scottish Regiment, now Senior Staff Officer Dental in HQ Mobile Command, was a member of the Serving Survivor Contingent.

The Contingent gathered at CFB Trenton and flew directly to Paris. At Orly Airport the French Air Force and Army provided buses and staff cars to transport the group to Dieppe. High above Dieppe, on the road to Rouen, a tent city sprang into being. This was to be the home of the Survivors. The 2nd Battalion Princess Patricia's Canadian Light Infantry were our hosts. As they provided a guard of honour, one hundred strong, they came equipped with kitchens, messes, and the staff required for a small field operation such as this.

Unfortunately the PPCLI could not control the weather or change the fact that the camp site had been very recently used as a cow pasture. Preceding the ceremonies a briefing took place in the new Casino. The original Casino was a unit objective in the raid and was totally destroyed.

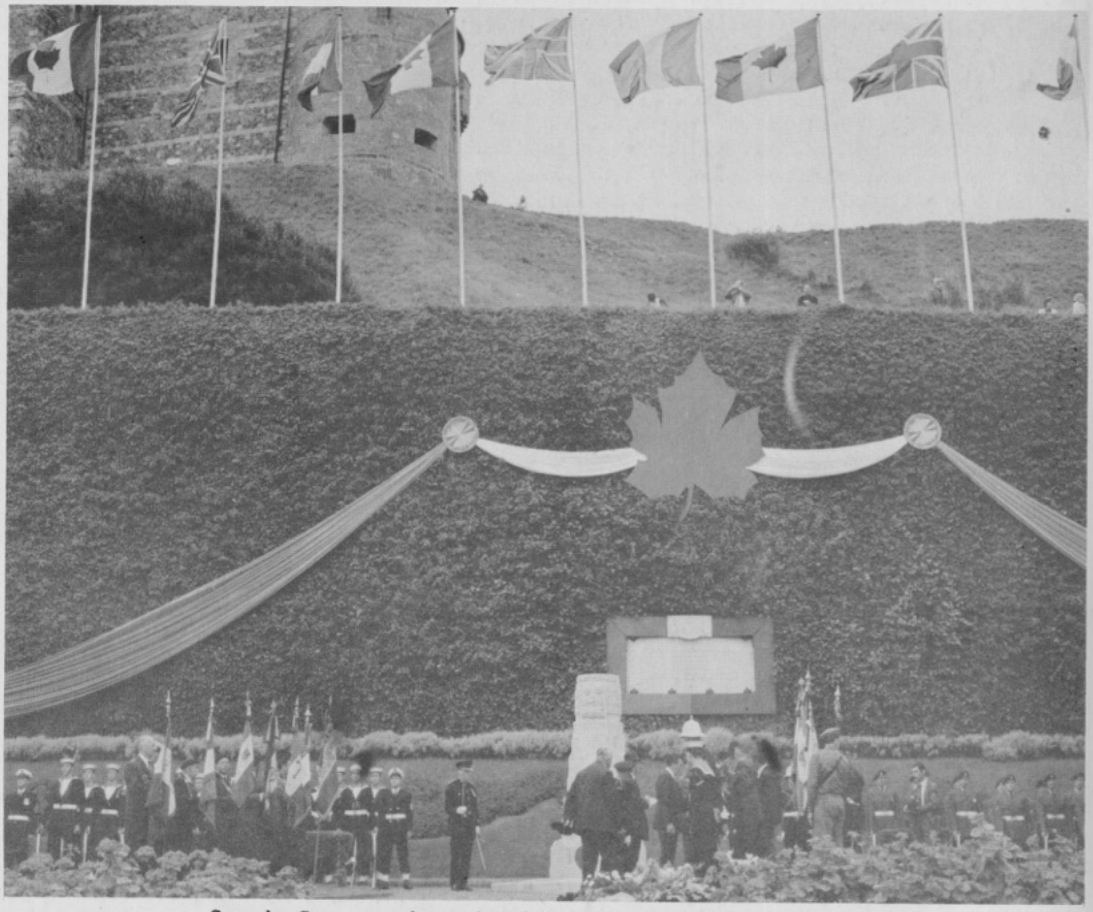
The ceremonies began at 1830 hours on 18 August on the Esplanade. The Guard of Honour from the PPCLI and their Corps of Drums paraded for Retreat and a Feu-de-Joie. Remembering the shambles of the beaches and the Esplanade on the original visit, the sight of this well turned out, precise, body of Canadian troops brought a feeling of pride for our Canadian Forces.

At 2100 hours a Night Watch took place in the cemetery. This moving ceremony has taken place every August 18th since 1945. It is staged by the citizens of Dieppe. Sentries are posted around the cemetery and a torch party arrives and lights the avenues between the graves. Prayers of honour and thanksgiving take place and the torches are extinguished one at a time to leave the area in quiet and darkness once again.

On the actual anniversary day of the raid, the 19th, a Canadian memorial service was held in the cemetery. This was followed by wreath laying ceremonies at the many regimental memorials erected along the beaches to honour Les Fusiliers Mont-Royal, the Royal Hamilton Light Infantry, the Calgary Tank Regiment and the South Saskatchewan Regiment, to name but a few.

After these individual memorial ceremonies, all units reformed and paraded to

Canada Square. Lord Louis Mountbatten, former Chief of Combined Operations, placed a wreath on the main Canadian cenotaph.



Canada Square, shown in this photograph is at the base of one of Dieppe's characteristic cliffs which proved to be the downfall of the sea-land operation.

At the conclusion of this ceremony, during a minute of silence, three Dakota aircraft of No 1 Air Division RCAF from Lahr Germany dropped 10,000 poppies over Canada Square and along the beaches.

The military ceremonies concluded with a march past with Lord Mountbatten taking the salute on behalf of all representatives on the dias with him; including those from the French Government, Canada and Great Britain, and those from the Navy, Army, Air Force and Royal Marines.

The parade wound up the narrow streets of Dieppe. It is a small city but in mid August it is a very large tourist resort. The streets were jammed and on several occasions the parade was halted by the cheering throngs. Flowers were strewn along the route and rained from balconies. Many of the older citizens, themselves survivors of the raid, hung flowers on the troops and marched along with them. It was a moving sight to see blind men marching hand in hand with a buddy, to see men with artificial limbs striding with the band. Twenty-five years had not dimmed their courage.

Following the march past and parade, a reception was given, with the Canadian Government as the host, for all who took part in the ceremonies and for the citizens of Dieppe in general.

The day concluded with a Son et Lumière at 2200 hours. In the darkness there were thousands of people along the beaches, waiting. Out in the channel a red glow of dawn started to show. The music was from Beethoven's Fifth Symphony, starting with his resounding V for victory chord. Suddenly in the Puis area rockets are fired from the sea to shore, then the beaches at Pourville waken, and finally the shore line of Dieppe bursts into flame and explosions. The defences reply with the most thunderous, explosive rockets ever heard. The music swells and a commentator calls the Units by name as they land. The Churchill tanks of the Calgary Regiment appear, outlined in fireworks, each in turn exploding and burning. Then with one final indescribable explosion the fireworks stop, the music dies and the people leave. The beach is shrouded in smoke, the tank outlines are burning and all becomes quiet again.

Fortunately the realism stopped here. There was no trek to the top of the hill or to the prison camps. France and the Citizens of Dieppe paid a great tribute to the Canadian Forces and to the members of the Royal Navy, Royal Air Force and the Royal Marines who took part in the raid. It was a most memorable and moving occasion.

- -

SERVICEMAN PARTICIPATION STUDY

Major JVP Chatwin, CD, DDS, DDPH

In May of 1965 a pilot study was conducted which involved a random sampling of the dental records in 19 selected clinics across Canada involving approximately 38% of the total strength of the Canadian Forces. The dental records of 3421 of these 46,460 servicemen were examined.

The aim of this study was to determine the extent to which the service population participates in the Service treatment facility.

The results showed that 85.50% of the patient commitment received dental coverage of a varying degree and that 63.72% received good or adequate dental treatment. In reporting this work Harrington[1] suggested that an unknown degree of bias existed in clinic selection. In order to eliminate this bias and to check the pilot study results a definitive study was conducted in January and February 1967 with the aim as defined for the pilot study.

Method

All 137 full-time and 49 part-time clinics covering the total Service population in Canada, Europe and with the United Nations Emergency Force in Egypt were involved.

At each clinic permanent dental treatment records, the DND 422, were checked and all those with the last digit of the service number ending in 3, this number being chosen by chance, were drawn to form the random sample. The pilot study had service numbers ending in 5.

For the purposes of this study, the same terms of reference used in the pilot study were applied and the rating recorded by clinic on a proforma.

1. Treatment definition

a. Regular Treatment

This patient visits the dental clinic routinely whether for examination, consultation, prophylaxis, Sn F_2, or other dental requirements and has the necessary work completed. Over the years he is interested in his oral health.

b. Intermittent Treatment

This patient goes to the clinic probably less than once a year, not counting emergency treatment, and has some of the necessary work completed. There may be a lapse of one or more years between visits but his mouth is not considered to be completely neglected. The visits are generally proportionate to the patient's requirement.

c. Emergency Treatment

This patient visits the dental clinic as a result of neglect, but after receiving treatment for any particular complaint does not return until another emergency arises. He uses the dental facilities for relief of pain and avoids dental treatment unless he has a complaint.

d. Nil Treatment

This patient's record shows only an examination on entry, indicating that he has avoided treatment during his service career to date.

2. Terms of reference for sample selection

a. Personnel must have at least one year of military service.
b. Age or rank is not a factor.
c. Treatment started after examination on release will not be counted.
d. If for any reason there is difficulty in making the choice of a specific category for a selected chart, it will be recorded in the next lower group.

3. Proforma for Dental Treatment Study

Clinic Location	
Station Strength	
Regular Treatment	
Intermittent Treatment	
Emergency Treatment	
Nil Treatment	
Total No of Charts Recorded	

Findings

With a population of 102,027 servicemen, charts were examined for a new sample, size 9352, with service numbers ending in 3, i.e. 9.17% of the group. The findings are shown below with the pilot study results included for comparison.

	1967		1965	
Category of Treatment	Number of charts selected	Percentage	Number of charts selected	Percentage
Regular Treatment	3028	32.38%	1105	32.30%
Intermittent Treatment	3184	34.04%	1075	31.42%
Emergency Treatment	1931	20.65%	745	21.78%
Nil Treatment	1209	12.93%	496	14.50%
Total No of Charts Recorded	9352	100.00%	3421	100.00%

Discussion

From the statistics presented no significant variation is noted between the pilot study and the present returns embracing the whole Service population while excluding all those who were in the pilot study sample.

In discussing the pilot study results, the author noted that it showed 85.5% of the RCDC patient commitment received dental coverage of a varying degree and that 63.72% received good or adequate dental treatment. The 1967 study shows 87.98% and 66.43% respectively. With the continued emphasis on dental health education in the Service it is anticipated that future studies will reflect this trend.

Reference

1. Harrington, W.H. Dental treatment study - patient participation. The RCDC Quarterly 6:4, Jan 1966. p.17.

- -

Biographical Sketch

Maj PL Griffiths CD

CO 1 Dent Eqpt Dep

Major Griffiths served with the Royal Navy (Fleet Air Arm) from 1942-46. He joined the Canadian Army in 1949 and was commissioned RCOC in 1952, subsequently holding quartermaster, depot and staff appointments in Canada and Europe. In 1963 he was appointed logistics officer at ONUC HQ Congo and in late 1964 served with the UN Force in Cyprus. In 1965, after attending IBM courses on computer orientation, flow charting and systems analysis, he became a member of a CFHQ project team designing supply procedures for computer application. He was appointed CO 12 ROD Halifax in 1966 and later Base Supply Officer as integration progressed.

In July this year he transferred to the RCDC and in August was appointed CO No 1 Dental Equipment Depot, CFB Petawawa.

Welcome to the Corps!

PORCELAIN FUSED TO GOLD

Major D.E. McDermott, CD, DDS

Introduction

The advent of new techniques for fusing porcelain to gold and of securing life-like shading is now a reality. Glazed porcelain has long been recognized as the material of choice for full and jacket crowns and for fixed partial dentures. It is compatible with the tissues, will neither discolour nor erode and it is impervious to oral fluids. It is the most benign material to the tissues that can be used in the mouth. But in spite of these advantages there has been a reluctance to use it because of its fragility. That reason is no longer valid. Porcelain fused to gold provides a restoration that is superior to either gold or porcelain used alone.

Characteristics

There are many porcelain fused to gold materials on the market such as Ceramco, Micro Bond, Nobil Bond, etc. The basic key to all of them is the compatibility of the porcelain to the metal in terms of linear coefficient of thermal expansion. Each company rigidly matches its metal to porcelain and vice versa; thus the metal of one company should never be used with the porcelain of another, and to do so is to invite serious problems.

The ability of the porcelain to bond itself to the gold has been achieved, as stated, primarily by matching the linear coefficients of thermal expansion of the two materials. The bond between the porcelain and gold is mainly the result of a chemical and wetting reaction. The mechanical bond obtained plays only a minor role, hence no mechanical retention or undercutting of the gold is necessary. The coefficient of expansion of the porcelain has deliberately been made slightly lower than that of the metal so that the porcelain is in a slight state of compression. This is an important factor to remember when designing jacket crowns and bridges. Porcelain is in its strongest state when it is in a state of compression and restorations should be fabricated to take advantage of this property. To disregard it is to invite failure. The whole concept of fusing porcelain to gold was founded on the principle that the porcelain gains its maximum strength when surrounding a cylindrical metal form. To illustrate this point, picture the hand surrounding a round pole; if the hand completely surrounds the pole a strong grip can be attained, but the less the hand is able to wrap around the pole the weaker the grip becomes. Similarly, porcelain more completely surrounding the metal creates a stronger bond. For this reason porcelain veneers are liable to become a problem unless the porcelain is carried over the incisal edge onto the lingual.

Another factor to consider is that of deformation of the metal. When the occlusal surface is gold and the buccal or labial facing is porcelain, fracture is likely because of the elasticity of the gold. Over a period of time, as the bite imposes on the metal, a strain is set up which could eventually fracture or "pop out" the veneer. Most readers will have difficulty in accepting this concept, as the occlusion is traditionally in metal. However, with porcelain fused to gold the strength of the restoration is actually increased. For the reasons outlined, with the occlusion in porcelain there is far less chance of failure than with a metal occlusal/incisal

surface and a porcelain veneer facing. Using high speed equipment the porcelain can be quickly adjusted in the mouth and the glaze recovered by refiring.

Tooth Preparation

The procedures outlined in this article are offered only as a guide. In the last analysis only the dentist concerned can determine which preparation procedures are best suited to each individual case.

The preferred preparation for porcelain fused to gold is the "chamfered shoulder preparation". Figures 1 and 2 show the prepared tooth with a cross sectional view of the gold porcelain relationship.

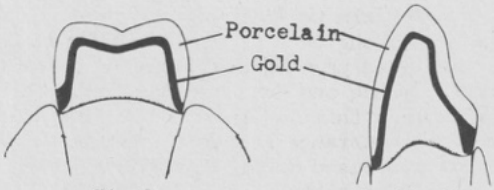


Fig 1 Fig 2

Fig 3

Note Fig 3 - Course cut diamond for bulk reduction and fine cut to finish subgingivally.

The following features should be noted:

1. a minimum of 1½ mm of the tooth structure must be removed circumferentially;
2. a minimum of 2 mm must be removed occlusally or incisally.

This will ensure an adequate thickness of gold and porcelain for maximum strength and esthetics. There should be a definite subgingival finishing line around the tooth and the final form should taper slightly on all surfaces towards the occlusal or incisal. This operator prefers to do the entire preparation using a high speed handpiece with a round end pencil diamond stone as illustrated in Fig 3. The noteworthy feature here is that all bulk reduction is done with a course grit diamond stone, then finishing subgingivally and rounding off corners with a fine grit diamond stone. The diamonds used are Densco Blue White Friction Grip Shank, #'s F1DT - Fine and F2DT - Coarse. Fine grit diamonds should only be used for finishing, otherwise they quickly show signs of wear.

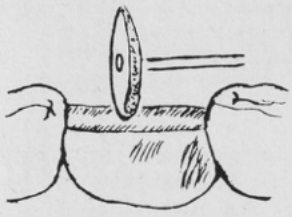


Fig 4

Fig 5

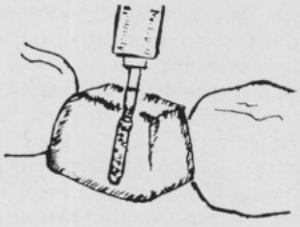


Fig 6

Note: Fig 4 - Gross reduction using wheel stone in straight handpiece
Fig 6 - Reduction circumferentially with coarse cut diamond
Finishing and subgingival preparation with fine cut diamond

Occlusal reduction for posterior teeth is accomplished by using a wheel stone in the straight handpiece (Fig 4). The occlusal form and outline can almost be completed with this stone. Again the circumferential reduction is done with a coarse F2DT diamond. The occlusal resistance form and rounding of sharp corners is done with the same stone (Fig 5) and the preparation finished sub-gingivally with the F1DT (Fig 6). The preparations are then sanded with fine-grit sandpaper discs preparatory to impression taking. It is imperative that there be no undercuts, and if doing bridge work the

abutment preparations must be parallel. It is again emphasized that there must be a minimum reduction of 1½ mm's circumferentially and 2 mm's occlusally, otherwise a bulky and protrusive restoration could result. In areas where these tolerances cannot be achieved porcelain veneers are contra-indicated. When dealing with cases in which the clinical crowns are too short to permit a 2 mm clearance, the occlusal surface must be finished with metal, and porcelain is used circumferentially.

Some Pitfalls and Their Causes

1. Checking and breaking of the porcelain veneer on insertion or within a short time may be attributed to one or more of the following causes:

a. undercut preparation,
b. lack of parallelism,
c. insufficient tooth removal,
d. faulty impression,
e. corners of preparation not rounded.

When gold-acrylic veneer crowns are used as abutments they may be snapped into place and the strain created may not show immediately. The acrylic facing may discolour or "pop", but this may not occur for quite some time due to the elasticity of the acrylic. However, the porcelain-gold combination has no elasticity and will not go over non-parallel abutments and undercuts without checking or breaking.

Fig 7

Breakage may also be caused by poor fabrication on the technician's part. A strong restoration cannot be achieved through bulk of porcelain. The metal understructure must be built to match the tooth contour, and then the porcelain is baked to the metal as evenly as possible. There can be no sharp corners or edges on the metal to create shearing problems during mastication. Areas of porcelain bulk should be avoided since masticatory stresses will shear porcelain from porcelain instead of transmitting the shock through the porcelain to the metal beneath (Fig 7). This is particularly true when using porcelain-gold pontics. There is a tendency to use less gold and more porcelain, thereby inviting this shearing problem. Then too, when the gold is non-rigid, flexion will cause the porcelain to crack.

2. Impact Shock - When the porcelain cracks because of a sudden blow, it can be repaired by removing the crown from the mouth, grinding a "V" shaped trough along the crack, filling it with porcelain and refiring the crown.

Normally three to four firings are required to fabricate a crown. However, the two materials are so manufactured that they can be fired together five, six and possibly seven times before they lose their stability.

3. Post Insertion Corrections - Often after a crown or bridge has been fired to a natural glaze (approx 1800°F) and is ready for final insertion, the operator may wish to add to or emphasize a contour. This can be done by using a lower fusing porcelain (approx 1600°F) adding it to the area required and refiring to a glaze. In this case, care must be taken that the 1800°F glaze is not abraded because it will not reglaze at the lower firing temperature.

Summary

The progress of restorative dentistry is such that the practitioner can no longer be satisfied with a restoration that merely restores function. He should insist, and indeed patients are insisting, that the prosthesis have a vital, natural appearance. Porcelain fused to gold properly utilized comes closer than any other material to realizing this objective.

The following key points must be kept in mind when preparing porcelain fused

to gold restorations:

a. the crown or bridge should be designed so that excessive porcelain bulk is avoided - never more than 1½ mm labially or buccally and 2 mm occlusally;

b. labial or buccal porcelain areas must be convex, avoiding boxing or concavities;

c. sharp points, corners or angles on the porcelain bearing surface must be eliminated;

d. full coverage porcelain is ideal, but a veneer bonded to a rounded convex surface can give many years of service if properly designed;

e. thick and thin areas of porcelain should be avoided;

f. repeated firings with concomitant expansion and contraction can cause cracking;

g. metal thickness must be no thinner than .3 mm in crown work, and if the restoration is a multiple bridge .4 mm is minimal;

h. preparations must be as smooth and free from projections as possible to avoid fracture of the porcelain on cementation.

* Editor's Note

From the period 17-21 Jul 67 a team consisting of Col JW Turner, Maj DE McDermott, Maj AG Taylor and Sgt Rothwell KS visited the JF Jelenko Company at New Rochelle, N.Y. The purpose of the visit was to orientate and familiarize RCDC personnel with research and development associated with the porcelain bonded to gold technique. An ever increasing interest in this technique prompted the publication of articles by Maj McDermott and Sgt Rothwell in this issue of the Quarterly.

- - - - - - - - - - - - - - - - - - - -

TECHNICAL LABORATORY CONSIDERATIONS IN FABRICATING PORCELAIN BONDED TO GOLD PROSTHESES

Sgt KS Rothwell, CD

Introduction

The many advantages of glazed porcelain as a restorative material have long been recognized. Its compatability with tissue, its natural vital appearance, its non-porosity and colour stability are among these advantages; the only outstanding disadvantage being its fragility. During the past ten years research has made strides in the process of bonding porcelain to gold, thereby overcoming this disadvantage. The combination of porcelain bonded to gold now enables the fabrication of a restoration with all of the esthetic advantages of porcelain, plus the assurance of strength, fit and durability of gold.

This article deals with the technical laboratory considerations of this technique.

Accommodation

Ideally the ceramic department of a laboratory should be a separate room, free of contamination from metal, acrylic grindings and dust. All instruments and tools used in the adapting and firing of porcelain must be kept scrupulously clean. Any foreign particles introduced into the porcelain will cause bubbles and voids and may cause a failure in the glazing process. The waxing, investing and casting of the gold may be fabricated in the existing laboratory facilities.

Equipment

Specialized equipment is necessary, however, the broken arm centrifugal machine can be used in conjunction with a torch burning a mixture of oxygen and either natural gas or propane. Acetylene alone will not give the required heat, nor will a mixture of air and natural gas or propane. Acetylene and oxygen combinations will overheat the gold very rapidly and will carbonize the metal.

A special oven is required because the mold temperature for burnout is approximately 1300°F. However, after the casting is made, it is advisable to return it to the oven at 1200°F and raise the temperature to 1925°F to decontaminate and degas the metal.

A porcelain furnace is also required. This furnace must be capable of rising from 1200°F to 1800°F in approximately six minutes. A vacuum attachment to the furnace will produce a denser porcelain and will lessen the possibility of porosity.

A small bench-type sand blaster using a quartz abrasive is most useful for removing oxides from the gold. It will also clean and shine gold without any surface loss.

The only other equipment required consists of hand instruments for adapting the porcelain, sable hair brushes, and a dental engine and handpiece with stones for trimming and shaping the porcelain.

Materials

Investments - Special high heat investments are essential. These investments do not mix as readily as a plaster-bond investment and therefore should be spatulated more thoroughly. Complete instructions for mixing are supplied by the manufacturers and should be followed closely.

Gold Alloys - High heat gold alloys must be used for casting restorations that are to receive porcelain. High heat solders are also necessary. It is of interest to compare the heats required to process porcelain bonded to gold. Porcelain glazes at approximately 1800°F. As the solder joints of a fixed partial denture have to withstand this heat, the solder used is in the 2000°F to 2100°F range. The gold itself melts at approximately 2300°F. The comparable figure for melting conventional gold in normal fixed partial denture prostheses is approximately 1700°F. A metal conditioner, which is in fact a compound of 24K gold, is fused to the areas of the casting which will be bonded to the porcelain. This conditioner aids considerably in the colour control of the porcelain.

Porcelain Powders - The porcelain powders are divided into four groups.

a. Opaque Porcelain - This first application of porcelain has a three-fold purpose. It masks out the colour of the underlying gold, it compliments the gingival shade, and its fusing power joins the porcelain to the gold in a powerful bond. This opaque porcelain should have a thickness of 1/3 mm after firing.

b. Gingival or Body Porcelain - This makes up the majority of the bulk of

porcelain, and has to be carefully built up and over-contoured by approximately one-third of the required size to compensate for the considerable shrinkage which takes place during firing. The gingival powders are supplied in a variety of natural tooth shades and hues.

c. Incisal Porcelain - The third group used is the incisal shade, and this can be applied with a sable hair brush to the prepared body of the gingival porcelain.

d. Modifiers - The final group of porcelain powders consists of the modifiers. These are strong, basic colours that can be used to create slight colour differences to the regular shades.

Techniques

Casting Techniques - A separate crucible must be kept for the gold, as this special alloy does not contain copper. This gold must not come into contact with even trace elements of conventional gold which do contain copper because the presence of copper, even in the minutest amount, will cause the porcelain to turn green. Flux should not be used during the melting and casting procedure. The alloy is not quite as fluid as regular crown and bridge gold, therefore an extra turn should be put on the spring of the casting machine to give a little more casting force.

Sprueing - The high heat used to melt the gold causes more gas formation. If regular sprueing is used, porosity and incomplete castings will be encountered. Techniques used to overcome these difficulties include much larger sprues, 10 gauge in place of the conventional 14 gauge, and a system of vents from the casting. This allows the gases to escape more quickly than through the porosity of the investment.

Porcelain Technique - The porcelain powders are mixed with distilled water to a workable putty-like consistency that can be adapted and shaped with either sable brushes or hand instruments. The porcelain is then fired, trimmed with stones, added to and re-fired until the correct shape, occlusion and contact of the restoration is obtained. As many as five separate firings may be made without deterioration of the porcelain. The final step is to fire a glaze to the restoration, which seals the surface of the porcelain with a fine film of glass which is impervious to oral fluids and will ensure maximum tissue tolerance.

Crown Design

The design of the gold casting is very important. It is emphasized that the underlying gold must have a minimum thickness of 0.4 mm (26 gauge). A thin diaphragm of gold which has any flexibility will defeat the purpose, i.e. instead of adding strength to the porcelain, it will considerably weaken it.

Anteriors

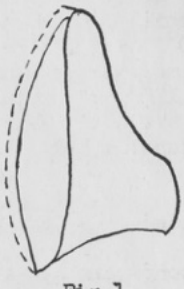


Fig 1

Veneer

The porcelain bearing surface is convex. The gold incisal edge is thick and rounded.

Fig 2

Full Coverage

Crowns which will be connected have the reinforcing lingual shoulder extended to form the contact point.

Researchers theorize that a chemical bond is formed between the metal and porcelain, thereby eliminating the necessity for providing retentive features within the gold crown. Any sharp angles or undercuts in the gold will weaken the bond. Undercuts, loops and angles, which are so necessary to retain acrylic to gold, only act as wedges and chisel edges to the porcelain.

Incisal edges of anteriors should not be protected by gold. Occlusal surfaces of posteriors are stronger when formed by porcelain and will wear better than gold. The normal fragility of porcelain stems from torque and oblique stresses which are imposed on it. Figures one to four illustrate some basic designs used for porcelain bonded to gold restorations.

Posteriors

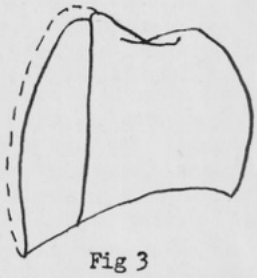


Fig 3

Veneer

The porcelain bearing surface is always convex - no boxing or undercuts for retention. The porcelain is carried to the buccal-occusal area ending in a rounded joint.

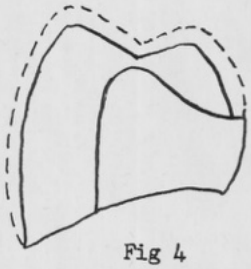


Fig 4

Full Coverage

The lingual shoulder is extended mesially and distally to provide connecting points as close to the occlusal surface as esthetics allow.

These basic designs can be adapted and used for most porcelain bonded to gold restorations including pontics for fixed partial dentures.

Conclusion

It should be pointed out that processing ceramic restorations calls for much skill on the part of the technician. He has to be extremely adept in the shaping, firing and trimming of the porcelain to correct dimensions. He also has to be able to blend shades and modifiers, both gingivally and incisally to a high degree of colour accuracy. This is a skill within the dental laboratory technicians' trade which is unique and the technician highly proficient in this art is called a "ceramist".

- -

"I think there should be a new petition in the litany to be read in hospital chapels or wherever doctors and nurses do, or ought to, congregate. It might be as follows:

'From inability to let well alone; from too much zeal for the new and contempt for what is old; from putting knowledge before wisdom, science before art, and cleverness before common sense; from treating patients as cases, and from making the cure of the disease more grievous than the endurance of the same, Good Lord, deliver us.'"

- From a paper delivered at the Fourth Meeting of the Australian and New Zealand Society of Oral Surgeons, Sydney, February 24, 1966, by Sir Arthur Amies, C.M.G. - Austral. J. Dent. 11:223, Aug., 1966.

PERIODONTAL DISEASE AND ORAL HYGIENE

Major RE Dyer, CD, DDS

Periodontal disease is a complex entity the aetiology of which involves systemic, local and environmental factors which are inextricably interwoven. Inherent with these factors are body responses to the destruction and repair of tissues. It is recognized that debris is a forerunner of gingival disease of an inflammatory nature.[1] The importance of this debris cannot be underestimated, but it would be erroneous to state that its removal is the only requirement for the control and prevention of periodontal disease.

Types of Debris

The debris involved in periodontal disease may be classified into three types:

1. Plaque, in its initial stages is not visible to the naked eye without the use of disclosing solutions or tablets. In a large build up, it is visible as a semi-transparent coating on the teeth. It is a gel-like mat which traps bacteria and exfoliated cells, and is capable of concentrating calcium from two to twenty times that found in saliva. Plaque is the most destructive type of oral debris.

2. Materia alba, is a soft white deposit which clings to the teeth and gingivae, and also to the dental plaque.[2] It too is a base for large accumulations of bacteria and exfoliated cells.

3. Food debris, consisting of particles of food accumulates between the teeth as a result of food impaction and caries, and large pieces of food lodge in the interproximal spaces and other sheltered areas.

It is important to note that food for the bacteria of the plaque and materia alba is supplied in part by food debris and in part by organic substances produced by the body. In the case of body produced substances the supply is continuous, day and night, and therefore this source of toxic waste is ever present.

Development of Periodontal Disease

The first stage of periodontal disease is gingival inflammation which is characterized by:

a. loss of stippling
b. edema
c. changes in tissue tone
d. changes in gingival colour

These changes occur first in the papillary tissues, later involving the tissue of the entire gingival crevice.

As the inflammation increases, proteolytic enzymes produced by the bacteria and neutrophil leukocytes of the body[4] dissolve connective tissue fibers. The result is destruction of the gingival fibers apical to the gingival crevice and the periodontal ligament becomes involved. Gingivitis has now become periodontitis. Continued

inflammation results in apical movement of the periodontal ligament and pocket formation begins. Bacterial plaque flourishes in pocket areas because it is impossible for the patient to reach these protected areas with any mechanical means of cleansing. The by-products of the plaque, coupled with the body's response to inflammation, attacks the bone of the alveolar crest. Inflammation spreads through the bone via the blood vessels with resulting bone loss, and if it continues unchecked, destruction of the periodontal ligament and alveolar bone progresses until the teeth are lost.

It should be noted that calcified deposits on the teeth are not the direct cause of pocket formation. However, calculus is a mechanical irritant which causes the tissues to bleed, thus supplying nutrient to the bacterial plaque which lies on the surface of the teeth or on the surface of the calculus and is in close apposition to the inflamed walls of the pocket.

Preventive Periodontics

"Preventive periodontics includes the development and application of procedures which will promote oral health and interfere with the initiation and/or extension of periodontal disease."[5] Many studies have shown that a careful thorough system of home care can retard or eliminate[6] gingival disease. In advanced cases of periodontal disease, a state of oral health can be successfully maintained following therapeutic procedures by an adequate program of home care.[7]

The objectives of home oral hygiene are as follows:

a. prevent formation of calculus;
b. removal of bacterial plaque, materia alba and food debris;
c. maintenance of gingival contour, tone and circulation;
d. promote keratinization of the gingival tissue to resist mechanical or bacterial injury.[8]

Probably the device most used to achieve these ends is the tooth brush.[9]

Type of Tooth Brush

A recommended tooth brush is one which meets the following requirements:

a. a firm handled brush about six inches in length;
b. the brush head should be about one inch in length with the brushing surface in a flat plane;
c. both natural and synthetic bristles are acceptable;[5]
d. two or three rows of widely spaced hard bristles, or alternatively, soft bristles closely spaced and multitufted.

Method of Brushing

There are many prescribed methods of tooth brushing.[10] Two of these are favoured by the author.

a. Modified Stillman - The brush is placed at a forty-five degree angle to the long axis of the teeth with the bristles pointed in an apical direction. Pressure is applied laterally against the gingivae causing blanching. The entire brush is then moved coronally to remove loose debris from the teeth.

b. Charter's Method - The brush is placed at a forty-five degree angle to the long axis of the teeth with the bristles pointing in a coronal direction. Pressure is applied in combination with a slight rotary movement without shifting the position of the brush. This procedure is repeated until every surface of all teeth have been brushed. The occlusal surfaces are brushed by forcing the tips of the bristles into the pits and fissures of the posterior

teeth.

The combination of the two outlined methods of manual brushing have proved most effective in clinical practice. However, for people who are physically or mentally handicapped the standard motions of the electric tooth brush may result in more frequent and better cleansing of the teeth and gingivae.[11,12]

It should be noted that each tooth has five surfaces and only three of them are readily accessible to the tooth brush. The remaining two (i.e. the interproximal areas) may require an adjunct to the tooth brush to be properly cleansed.[6]

Interproximal Cleansing

There are many materials available for interproximal cleansing such as dental floss, dental tape, gauze bandage, etc. In a carefully controlled research program carried out by Altman and Stout[13] at Bethesda Naval Dental School, dental floss and three ply nylon baby yarn were tested as interproximal cleansers. The dental floss and nylon baby yarn were used according to the flossing principles laid down by Bass.[14] Their findings are summarized as follows:

1. 33% of the people tested were able to maintain a plaque free tooth surface with only a tooth brush.

2. When dental floss was added to the prescribed procedures the percentage rose to 49%.

3. When nylon baby yarn was substituted for the dental floss the percentage rose to 69%. However, nylon yarn had the disadvantage of breaking where tooth contacts were tight.

It is readily apparent that a flossing technique, using either dental floss or nylon baby yarn, is a necessary procedure for some 16% to 36% of patients.

Other Cleansing Devices

There are many other adjuncts on the market today, all or some of which are of value to patients in maintaining oral hygiene if properly used.

a. Interdental stimulators

- rubber type
- stimudents

These agents are employed for cleaning the interdental areas, massage of the papillary tissues, and stimulation of the lymphatics permitting edematous products and bacterial toxins to drain from the inflamed area.

b. Anti-calculus materials[15,5]

These materials include enzymes, chelating agents, anti-microbial agents and substances such as urea. They are incorporated into dentifrices, chewing gum, mouth washes, etc. There is considerable research literature on these materials, however, their use is largely on an experimental basis in the hands of trained researchers.

c. Water pressure devices[16]

Recently there has been renewed interest in water irrigation devices to improve oral hygiene. Contrary to the advertising claims these devices do not remove plaque, however, they are effective in removing materia alba and

food debris. They are most useful for patients wearing orthodontic appliances. Where periodontal disease is present and pockets have formed, the surface tissues are improved but there is no lessening of the inflammatory process in the deeper tissues.[17] In spite of some advertisements, this device is not a substitute for the surgical removal of the periodontal pocket.[18]

One of the problems facing dental researchers is the determination of the most effective pressure to be used on diseased tissue and on healthy tissue. That these two pressures will vary is readily understood, and any pressure which causes pain is actually irritating or tearing tissue. The matter of optimum pressures must be resolved since there are increasing reports of tissue damage as these devices are taken up by the general public. Until the limitations of these devices are fully understood and optimum pressures established, caution should be exercised in recommending their use to patients.

Conclusion

It is stressed that the method of oral hygiene must be tailored to the patient's requirements. The method will also depend upon his oral health, his manual dexterity, and above all his ability and desire to learn and follow a prescribed procedure.[5] Indeed, patient motivation and ability is of supreme importance, for the use of gingival surgery is only indicated if inaccessible areas (pockets) are thereby made accessible to good oral "hygiene" practices.[19] The continuing success of treatment is largely determined by the patient's ability and desire to co-operate in the plan undertaken.

REFERENCES

1. Gengsberg, M., and Yoder, A. The effectiveness of some traditional methods in oral hygiene nursing care. J. Periodont. 35:63, 1964.
2. Goldman, H., et al. Periodontal therapy. 3rd ed. St. Louis, Mosby, 1964.
3. Dental home care. Floss-Aid Inc. Santa Clara. n.d.
4. Periodontic syllabus. U.S. Naval Dental School, 1964.
5. Fedi, P.F. Oral health care, for the prevention and control of periodontal disease. Washington. U.S. Naval Dental School. n.d.
6. Lovdal, A., et al. The incidence of clinical manifestations of periodontal disease in the light of oral hygiene and calculus formation. Am. Dent. A.J. 56:21-33, Jan., 1958.
7. Fones, A.C. Mouth hygiene. 4th ed. Philadelphia, Lea and Febiger, 1934.
8. Robinson, B.G., et al. Effect of massage with the tooth brush on keratinization of the gingiva. Oral Surg., Oral Med. and Oral Path. 1:10,42, 1948.
9. Adair, O. Oral prophylaxis as practiced - failure or success. Am. Dent. A.J. 15:82, 1928.
10. Glickman, I. Clinical periodontology. 3rd ed. Philadelphia, W.B. Saunders, 1964.
11. Oldenburg, T.R. The effectiveness of the electric tooth brush in reducing oral debris in handicapped children. N.C. Dent. Soc. J. 49:39-43, Apr., 1966.
12. Lucente, J. Use of the electric tooth brush in severely retarded children. J. Dent. Child., 33:25-6, Jan., 1966.
13. Altman, R. Personal communication. June, 1967.
14. Bass, C.C. Optimum characteristics of dental floss for personal oral hygiene. Dent. Items Interest., 70:39, July, 1948.
15. Rao, S.S., and Shankwalkor, G.B.S. Status of certain chelates detergents and inhibitors as calculus solvents. Indian Acad. Dent. J., May-Nov, 1965.
16. The current status of water pressure devices. Temple Dent. Rev., Winter-Spring, 1967.
17. Wilderman, M.N. An evaluation of water pressure cleansing devices. La. S. Dent. A.J. Spring, 1966.
18. Kapodia, K.H. The role of hydro therapy in facial swellings. All-Indian Dent. A.J. 37:310-4, Oct., 1965.
19. Swenson, H.M. Personal communication, May, 1967.

The RCDC News

Division News

Visits and Inspections

Brig BP Kearney visited The RCDC School on 3 Aug to attend the marching-out parade for the DOTP candidates and the various functions associated with that occasion.

In October the Director General inspected dental facilities within 35 Field Dental Unit and in conjunction with this visit attended the USAEUR Dental Training Conference in Garmisch, Germany, 5-7 Oct.

Col LG Craigie, Lt-Col WR Thompson and Maj CA Casterton visited No's 11 and 14 Dental Units during October to familiarize RCDC personnel with current trades training policies.

Staff Changes

During this quarter a number of changes in staff have occurred within the Division.

- Maj CA Casterton was seconded to DPCAS/DOM where in addition to his present duties as career manager for RCDC officers and men he will be responsible for chaplains as well.

- Maj JW Fletcher was posted into the Division pending the retirement of Lt-Col AW Brusso, Senior Procurement Officer for the Corps.

- SSgt James MA arrived following his tour of duty with 4 Fd Dent Coy in Germany.

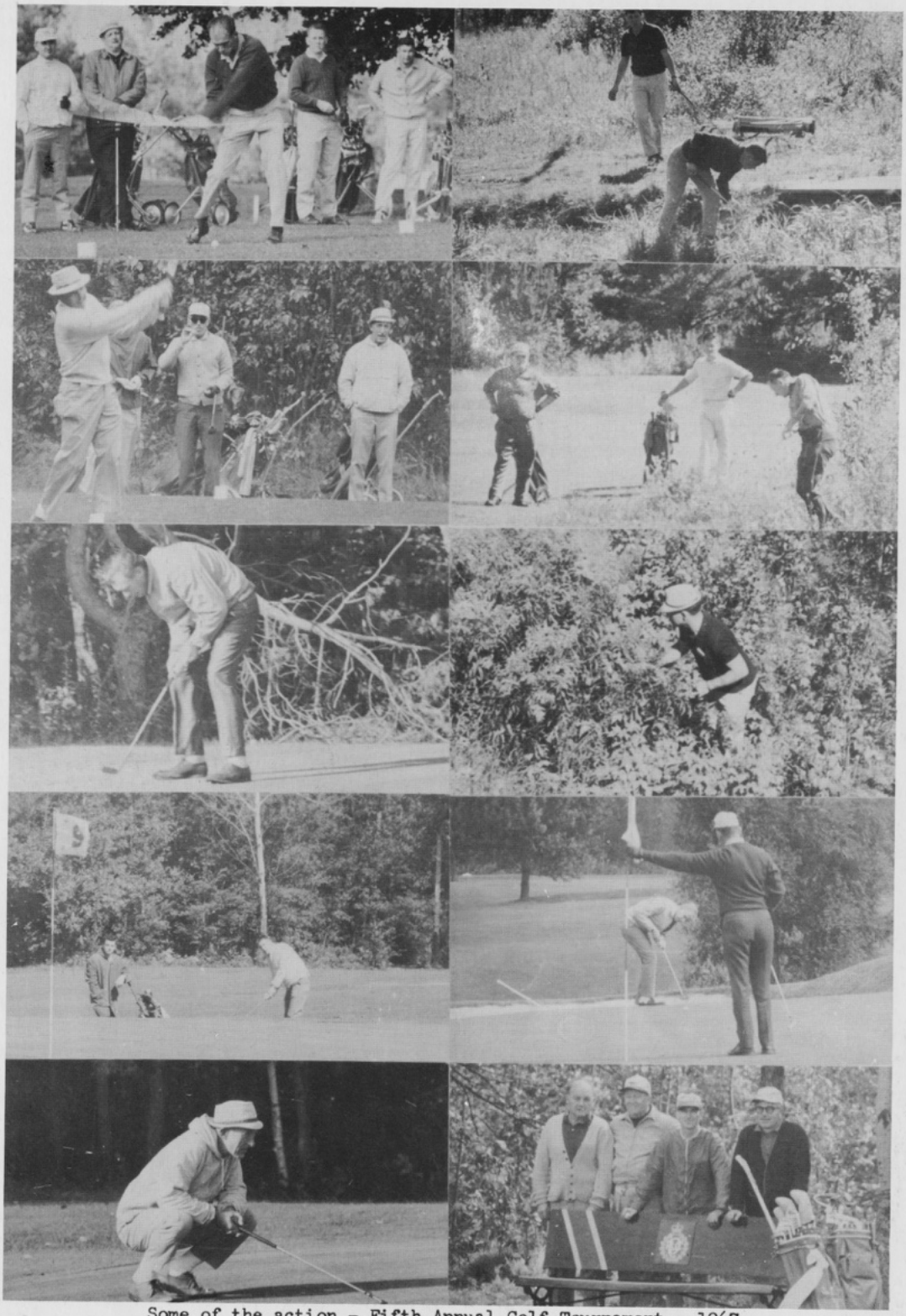
FIFTH ANNUAL RCDC GOLF TOURNAMENT

The Annual Golf Tournament is an event which is relished with keen anticipation by a large percentage of Corps members. The RCDC School continued the tradition of the past five years and hosted the Tournament at the Circled Pine Golf Club, CFB Borden 22-23 Sep 67.

Seventy-two golfers representing all Canadian based RCDC units participated in the two-day competition. Seven units competed for the Officers' Trophy for team play which was won by 15 Dental Unit.

Brig BP Kearney presents the RCDC(R) Officers' Trophy for Team competition to winning team from 15 Dental Unit

l to r - Lt-Col WH Carter, (Brig Kearney) Maj JFA Marcil and Capt CW Kearns



Some of the action - Fifth Annual Golf Tournament - 1967

Upper left - Brig KM Baird (ret'd) presents the KM Baird Trophy for Tournament low net for 36 holes to Lt-Col WH Carter whose score was 167.

Upper right - Col Covey (right) presents the GR Covey Trophy for low net for 18 holes to Maj JFA Marcil. His score - 82.

Lower right - Maj AG Taylor (right) presents the prize for tournament low net to Sgt Shergold KJ (145½).

A total of 24 prizes were awarded including one for the "most honest golfer" to Maj JL Craig (284).

On the final evening 95 members of the Corps attended the banquet and presentation of prizes and awards.

Staff members of the RCDC School are to be congratulated on their superb effort in organizing the Tournament again this year.

11 Dent Unit

Special Events

For those who believe that all glamour and excitement have gone out of a Northern posting, following is an exerpt from a recent Progress Report from the Whitehorse Clinic:- "The station CO and the station supply officer took Capt Erskine on his maiden fishing trip on Discovery Day. Capt Erskine hooked the head of a previously caught and cleaned fish, got a rock through his windshield on the way

home and had two flat tires - with only one spare in the trunk. Apparently all Capt Erskine has to do now is wrestle a grizzly bear - and he will be a real Yukoner."

Capt WG Ebert of CFB Comox arrived home from a weekend's hunting (one moose) and was informed that his wife was in hospital expecting twins. This news came as a complete surprise. Final "count-down" - twins. Congratulations - both for the twins and the moose.

Sgt Yvonne Dundas and her husband Al are also congratulated for recently adopting three children aged from six to nine years. Yvonne has returned to work at the Griesbach clinic after four week's leave during which time she learned the whys and wherefores of "instant motherhood".

Honour Cadet

O/Cdt BP Schow of the University of Alberta was named Honour Cadet, First Practical Phase DOTP 1967. He was unable to be present at the marching-out parade held at CFB Borden in August.

O/Cdt Schow (now 2Lt) is shown receiving a miniature trophy from Col GC Evans.

Retirement

Maj MP Quinn retired from the Forces in August this year. Phil served with the RCAF during World War II. He graduated from University of Alberta with his DDS in 1953 and since that time has served as a dental officer in the Corps. It is believed that he will continue to practise Dentistry as a civilian in British Columbia. Best wishes for the future are extended from his friends in the Corps.

12 Dent Unit

Inspections and Visits

Col SG Bagnall combined an inspection visit to Gander and St John's with attendance at the Newfoundland Dental Convention held during the period 28-30 Sep. The R Dent O states that the convention was successful despite an enjoyable but fruitless tuna fishing expedition.

Accommodation

HMCS Bonaventure arrived in Halifax in mid September following refit at Lauzon, Que. The QM staff is busy installing equipment in the repainted clinic accommodation.

Sgts Arsenault and Forsythe have been attached to the "Bonnie" and Maj McMaster will go "on board" when the installation of equipment is completed.

Sports

The Gagetown Clinic reports that Capt Percival was a member of the Gagetown Golf Team which placed second in the Zone 7 Championships held at the Green Gables Golf Course, PEI, 7-8 Sep.

Cpl Solomon of the Cornwallis Clinic has entered the 100 mile Centennial Run, and has now completed 20 miles. Lots of luck!

Retirement

SSgt "Kelly" MacFarlane has retired from the Forces after 25 years of service. He transferred from the RCIC to the RCDC in 1951 and since that time has served from Calgary to Halifax, and also had a tour of duty with 35 Fd Dent Unit.

A party in his honour was held at The Snack Bar, Gorsebrook, attended by a good representation of RCDC personnel from the Halifax area. Capt JF Mullins made the presentation consisting of a suitably inscribed mug. Best wishes from all members of the Corps go to SSgt MacFarlane on this occasion.

13 Dent Unit

Sports

Coy HQ and 15 Dental Clinic held a well attended golf tournament 18 Aug 67.

Retirement

Sgt Cahill JR has retired from the Forces after 21 years of service. It is understood that he plans to remain in Kingston. Best wishes from his friends in the Corps go with "Jim" and his family for a happy and successful future.

Lt-Col RA Fell, in the presence of members of No 7 Dental Clinic staff, CFH Kingston, presents an engraved silver tray to Sgt Cahill on his retirement.

14 Dent Unit

Accommodation

No 14 Dental Unit Headquarters and No 1 Dental Clinic CFB Winnipeg represent

the last units in the La Verendrye Lines of Fort Osborne Barracks. The close-out of this historic army site had been set for 30 Sep 67. An extension has been granted to these units beyond this date pending completion of accommodation for relocation.

No 14 Dental Unit Headquarters and No 1 Clinic Staff

Kneeling - l to r - SSgt Piche, SSgt Strub, Sgt Hussey and Cpl Palmer
First row l to r - WO2 Stewart, Capt Fortier, Mrs Colleaux, Capt Blasetti, Lt-Col Anglin, Capt Doyle, Miss Morkin, Lt Bowness, WO2 Mann and SSgt Roberts
2nd row l to r - Cpl Cormie, SSgt Jackson, Sgt Roy, Cpl Hansen and Cpl McKinnon

Special Events

The Pan American Games were held in Winnipeg from 17 Jul-4 Aug 67. During the Games No 1 Dental Clinic, Fort Osborne Barracks, provided emergency dental treatment for the athletes. Among those treated were representatives from Brazil, Cuba, USA, Trindad, Argentina, Columbia, Chile, Jamacia, and even a few native Canadians.

Sports

No 14 Unit news points out that their golf team, attending the Fifth Annual Tournament, had the honour of having their names called first for the team prize. Unfortunately, the teams were announced in reverse order. The writer reporting the event philosophized - "it counts not that you won or lost, but how you played the game;" which is the only wise thing to do under the circumstances.

Maj Collier recently returned from the Yukon after a hunting expedition. He reported - no game available!

15 Dent Unit

Special Events

Lt-Col JC Brick attended 25th Anniversary celebrations of the Dieppe Raid held at Dieppe, France, 17-22 Aug. He saw action in the raid as Regimental Signals Officer with the Essex Scottish Regiment from Windsor, Ont.

Presentation

Capt JP Laporte was invited by the Quebec Dental Association to present a paper at their convention on "Hospital Dental Service Procedures and Laboratory Tests Available to the Dentist".

Capt Laporte is shown holding the plaque presented to him by Dr Jacques Fiset, President of the Scientific Committee, as an expression of appreciation.

Sports

CFB Valcartier played host to the area playdowns (zone 6) on 17 Aug 67. Maj JFA Marcil was on the winning team from CFB Valcartier.

1 Dent Eqpt Dep

Change of Command

On 15 Aug a Change of Command was held at No 1 Dental Equipment Depot with Maj JW Fletcher handing over to Maj PL Griffiths.

Back row l to r - WO1 AG Ponton CD, Capt EA Church CD, WO1 EC Carpenter CD

Seated l to r - Maj PL Griffiths CD, Maj JW Fletcher CD

Sports

A twosome of Cpls Hall and McKay represented 1 DED in the annual "Tuffy Tieman" Golf Tournament held at CFB Borden 8-9 Sep.

The crew of yachtsmen at 1 DED is increasing, both Maj Griffiths and Lt Lobb having purchased new boats.

Dental Officer Training Plan - 1967

Practical Phase DOTP Training was conducted at CFB Borden during the summer months.

Brig BP Kearney visited the RCDC School on 3 Aug and attended the marching-out parade for DOTP candidates.

Upper left - Brig BP Kearney presents Third Phase Honour Cadet Trophy to 2Lt RCA Fearon (University of Alberta)

Upper right - Col GR Covey presents Second Phase Honour Cadet Trophy to 2Lt JC Steel (University of Alberta)

Lower right - Lt-Col AG Andrews presents the Chief Instructor's Trophy to 2Lt DE Gibbs (McGill University)

O/Cdt BP Schow (University of Alberta) was named Honour Cadet, First Practical Phase.

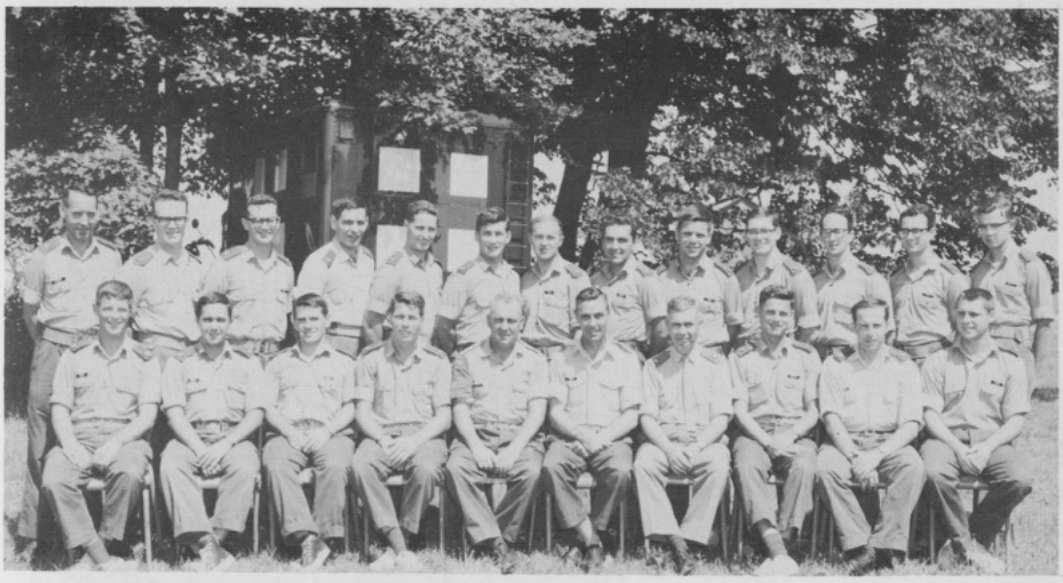
2Lt DA Graham (University of Alberta) was presented the Third Phase Honour Cadet Runner-up Award.

2Lt P Kozak (University of Alberta) was presented the Second Phase Honour Cadet Runner-up Award.

Field Exercise - 3rd Phase DOTP 26-28 Jul 67

A three-day field exercise was conducted at Meaford, Ontario, during which three mobile dental vans and a lecture room with six operating areas were used to

treat a total of 55 patients. The candidates worked in pairs and were rotated through all operating positions to gain experience in using field equipment.



3rd Phase DOTP - Meaford 28 Jul 67

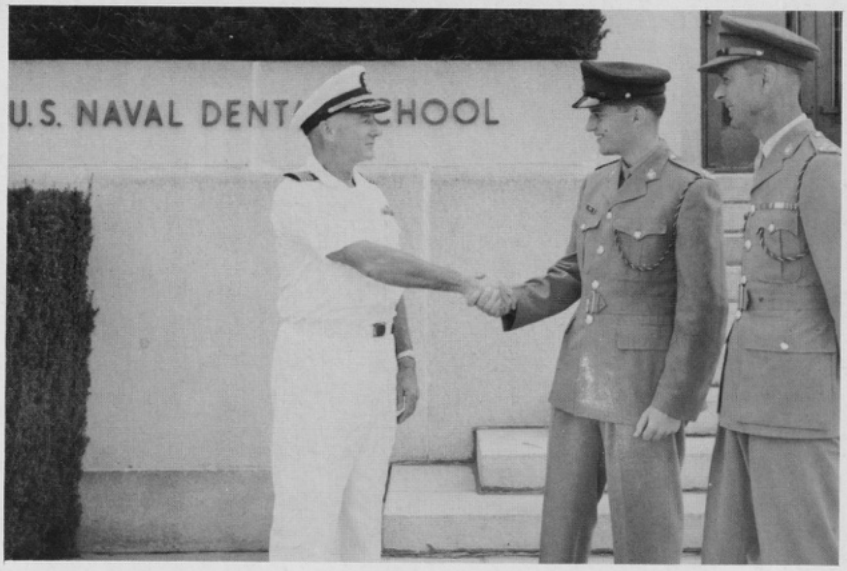
Front row (l to r) - 2Lts Arnold, Stirling, Gibbs, Graham, WO1 Batten, Majs Taylor, Donely, 2Lts Rosengart, MacInnis and Morrow.
Back row (l to r) - 2Lts Wood, Gunther, Nind, Wilford, Fearon, Dessureault, Stengl, Jalbert, Hawkins, Pettigrew, Campbell, Meunier and Schroeter.

3rd Phase DOTP Familiarization Tour of Military Installations, Washington DC, USA

At the conclusion of nine weeks' Third Phase DOTP training at the RCDC School, twenty candidates and Maj AG Taylor, the tour conducting officer, boarded a Hercules aircraft at CFB Borden for the three hour flight to Washington, DC.

The one week tour included visits to: Dental Activities - Walter Reed Army Medical Center, Naval Dental School - National Naval Medical Center, and Institute of Dental Research - National Institutes of Health.

Brigadier General Robert B Shira, Director of Dental Activities at WRAMC, meets 2Lt KHE Rosengart, class leader 3rd Phase DOTP



Captain KL Urban, Commanding Officer, US Naval Dental School, meets 2Lt RCA Fearon, 3rd Phase DOTP Honour Cadet

As well as being afforded an opportunity to see all dental facilities at these installations the class received a series of professional lectures from staff instructors at the Naval Dental School and Walter Reed Dental Activities.

The very full timetable kept candidates occupied from 0800 hours each morning until 1700 hours each evening. In their "spare time", visits were arranged to: the Whitehouse, the Smithsonian Institute and the US Marine Barracks.

At 0900 hours 12 Aug the group departed from Andrews Airforce Base for CFB Borden where the summer program was terminated and candidates returned to their respective universities.

Training

Cpl Jack A completed the First Aid Instructors Course at CFMTC on 6 Jul and also qualified to the Medallion Level in First Aid.

Maj JJN Wright attended a three day course from 7-9 Sep on "Occlusion" at the University of Western Ontario in London.

Meetings and Conferences

Lt-Col PS Sills presented a paper on "Practical Considerations for Complete Denture Stability" at the Newfoundland Dental Society Convention 28-30 Sep.

Sports

The annual golf tournament of the Huron Club was held at Base Borden on 29 Sep. Low net was won by Cpl Danyluck RW of the RCDC School.

Retirement

WO2 Jewson CC is retiring from the Forces after having been in the Dental Corps since 1941, apart from a two year period following World War II. WOs and Sr NCOs of the RCDC School gathered at the CFSAL Sergeants' Mess (CFB Borden) on 2 Oct 67 to present "Chuck" with a hand-painted plaque bearing the RCDC Crest, and to bid farewell and extend best wishes on his retirement. It is believed that he plans to settle in Montreal and become affiliated with the Dental Faculty of McGill University.

1 Dent Unit

Special Events

A Centennial Dinner Dance hosted by 1 Dent Unit for all ranks, their wives and friends in the Ottawa area was held on 8 Sep 67. This informal occasion was honoured by the attendance of Brig BP Kearney and other senior officers from the Division; and also two former Commanding Officers of the Unit, Col CM Cornish and Lt-Col WH Carter.

The hall and tables were decorated with Centennial "trappings". Refreshments and a "sit-down dinner", followed by dancing by candle-light provided an atmosphere in keeping with Centennial celebrations.

4 Fd Dent Coy

Field Operations

On 25 Sep the Unit moved to the concentration area with 4 CIBG for "Exercise Rob Roy". This was a large scale corps exercise covering a large area from Hannover - Lipstadt - Kassel, and with Canadian, British, Dutch and Danish troops involved.

Special Events

Special events were held throughout the Brigade area on 1 Jul 67 to mark Canada's Centennial. Provincial floats were paraded throughout the area and many social functions were held in the evening. Two dental vans with trailers were included in the "roll past" at Fort York and a clinic van and a laboratory van were set for display.

Retirement

SSgt Tait AJ departed from Germany for Canada on release after having been associated with the Dental Corps since 1940 (apart from broken service following World War II). Art remustered from DA to DER in 1961. On retirement from the Corps he will assume employment with the Faculty of Dentistry, University of Western Ontario. Best wishes go with him in his new career.

35 Fd Dent Unit

Change of Command

The Change of Command for this Unit from Lt-Col JC Brick to Lt-Col DH Protheroe became effective 8 Jul 67.

Accommodation - General

It is reported that 35 Field Dental Unit in the Lahr area of Southern Germany is beginning to assume its permanent posture after several months of moving, family separations, lack of adequate housing, treatment on an "emergency only" basis and general confusion.

The efforts put forth by members of the Unit since last spring have resulted in the establishment of a spacious six-operatory dental clinic complete with general and ticonium laboratories at 1 Wing Air Base in Lahr.

More recently, Headquarters has been allocated excellent accommodation, also in a separate building near the clinic, and should move some time in November.

Special Events

This Unit was honoured by a visit from Brig BP Kearney DGDS and Mrs Kearney following their participation in the Annual USAEUR Dental Training Conference in Garmisch 5-7 Oct. Brig Kearney inspected Unit HQ, 1 Wing and 4 Wing Clinics on 10 Oct and he and Mrs Kearney were guests at a dinner given by the Officers of 35 FDU in 4 Wing Officers' Mess.

Lt-Col DH Protheroe, Maj JPA Legendre, Maj CM Mason, and Capt BH Weeks all accompanied by their wives also attended the USAEUR Dental Training Conference in Garmisch.

Dent Det Cyprus

Rotation

Capt J Thompson arrived in Cyprus on 18 Sep to replace Capt D Wilson.

Sgt Bleakney J and Cpl Beauchamp CS arrived in August and October respectively, replacing Sgt Wilkinson G and Cpl Bosch P.

l to r - Sgt Bleakney J, Capt D Wilson, Cpl Bosch P and Capt J Thompson

The new members of the Detachment are well "settled in", having become familiar with working conditions; and also having been introduced to sailing, swimming in the Mediterranean, Finnish sauna baths, and some of the places of interest on the Island.

Professional Training

US Naval Dental School - Bethesda, Maryland, USA

Major	Y	Kamachi	- Fixed partial dentures	-	20 Oct-17 Nov 67
Capt	GDV	Dippel	- Complete dentures	-	25-29 Sep 67

Walter Reed Army Medical Center, Washington, DC

Major	LA	Reynolds	- Advanced Theory & Science of Dental Practice	- Aug 67-Jun 68

University of Toronto

Major	JW	Jolly	- Dental Public Health	-	Sep 67-Jun 68

University of Western Ontario

Major	JN	Wright	- Occlusion	-	7-9 Sep 67

Royal College of Surgeons - London, England

Major	RJ	Paturel	- Basic Dental Science	-	30 Oct 67-19 Jan 68
Capt	RM	MacDonald	- Basic Dental Science	-	30 Oct 67-19 Jan 68

Training

Williams Refining Company, Buffalo, New York, USA

Crown & Bridge Course and Familiarization in Pyroplast - 11-15 Sep 67
Lt C Johnston

SS White Company, Staten Island, New York, USA

SS White Equipment Course - 11-12 Sep 67
WO2 Conkey MF, Sgt Duve EA, Sgt Kennedy JF

RCDC School - Canadian Forces Base Borden

Dental Laboratory Technician Level 4 - 28 Aug-15 Dec 67
Cpls Anderson GM Feeney DC, Lindsay RS, Maelde P, McKenzie JN, Renwick WH, Tallack RJ, Taylor TH, Timmers PAG, Walker JM; Ptes Arbour JMM, Cloutier JRA

Dental Assistant Level 3 - 10-8 Dec 67
Cpls Armstrong PJ, Hache MJ, Parent TJ, Swiatkevich VH; Ptes Allen DG, Calnen RD, Clarke RM, Cooper TJM, Dale JE, Eden DM, Morphett DJ, Muir JA; AW2 Cook MA, Derksen BJ, Kent MM, Kidd LC, Lamoyne BA, McEllistrum SAF, Morton GD, Tucker BR; LAW Acres CJ, Audet MFE

No 1 Dental Equipment Depot - Canadian Forces Base Petawawa

Dental Equipment Maintenance Technician Level 4 - 5 Sep-8 Dec 67
Cpls Duffield RG, Wesley JA; Pte Burt GR

Welcome to the Corps

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

Maj PL Griffiths; LAW Audet MFE; AW2 Bondy CA, Cook MA, Derkson BJ, Kent MM, Kidd LC, Marcoux HL, McCaffery BH, McEllistrum SAF, Moore IJ, Morton GD, Parker JG, Roseberry MF, Tucker BR; Pte Cudmore WG

Promotions

To Lt - RW Bowness
To WO2 - Kirby HC
To SSgt - Jones RK, Minelli JV, Tanner ED

Retirements and Releases

Majs DJ MacPhee, MP Quinn; Capts JML Rochefort, WE Russell; Lt ESW Moore; WO2 Jewson CC; SSgts MacFarlane AJA, Tait AJ; Sgts Cahill JR, Fenton DL; Cpls Harmer WPC, Kilgrain BC, Kirley SJ, MacMillan SJ, Pringle JM; Mrs O Johnson

Vital Statistics

Marriages

Capt JJG Jacques to Miss Huguette Neault, Capt GO Lepage to Miss Lise Falardeau, Capt DA Stewart to Miss Elizabeth June Yeomans, Capt JO Strom to Miss Glenys Pamela Thomas; Sgt Cable to Miss Leslie Gayle Kingdom, Sgt MacPhee to Miss Joan Elizabeth Haines, Sgt Pink A to Miss Rodina Marie Ward; Cpl Butson to Miss Sandra Ann Laycock; Pte Muir to Miss Sonya Kalinosky

Births

Son - Capt & Mrs WG Ebert (twin sons), Capt & Mrs TC Ringland, Capt & Mrs HA Pankratz (adopted), Capt & Mrs EI Gerard, Capt & Mrs RF Cooper, Capt & Mrs WD MacKenzie; Sgt & Mrs GN Fathers; Cpl & Mrs WB Looker, Cpl & Mrs RM Haiplik, Cpl & Mrs HB Clifton; Pte & Mrs MJ Craig

Daughter - Capt & Mrs BM Trepanier, Capt & Mrs BW Yates; Cpl & Mrs TD Cormie, Cpl & Mrs JPAG Cliche