

DLANY Newsletter

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Information Balance

We received some negative responses, to the 'Costa Rica' article published recently in our newsletter, from members who believed DLANY is promoting the idea of sending dental lab work outside the United States. As we state in every newsletter we do not endorse, or assume responsibility for contributions in the newsletter.

It is DLANY's goal to provide members with current market trends in our industry. What may be beneficial for one organization may not be for another, however to be fair we provide a balance of ideas to our members.

It would be great if all dental lab work was done in New York State, however our economic world is changing and it is changing at a rapid pace. Outsourcing may be a bonus for some members and may not be beneficial for others. This is a very personal choice for each member to decide and we do not intend to influence any decision for or against outsourcing.

Our role as an association is to help each member increase business and improve their bottom line. DLANY is working on several new initiatives that we believe will be a tremendous benefit to all of our members.

Hopefully, this will clear up any misunderstanding about DLANY's intentions. If the article offended any member we apologize and ask that you please understand that we are trying our best to please everyone!

MESSAGE FROM THE PRESIDENT

Dear Member,

We are pleased to announce that DLANY INC has endorsed Paychex, a Fortune 500 Company. This company will offer a 15% discount off payroll processing charges to members of our association.

Paychex is a nationwide service specializing in payroll preparation, automatic payment of payroll taxes, direct deposit of your employees pay, bank reconciliation, checks signed and inserted into envelopes for confidentiality, and filing of both quarterly and annual returns, including W-2's.

In addition to payroll calculation and payroll tax compliance, Paychex can assist with obtaining Worker's Compensation and Disability insurance, employee benefits such as health insurance and retirement planning, and provide a comprehensive review of human resource requirements for your organization.

Paychex Inc. headquarters are located in Rochester New York and service the entire country with 135 branches. Their payroll specialists are not just data entry people, but are trained experts on the most recent payroll tax laws and regulations.

DLANY has chosen to endorse Paychex based on its current and past experience with our association. We believe their service allows an organization to focus on what they do best while having the peace of mind knowing that payroll and payroll taxes are being handled correctly.

For more information, please contact Kurt Rossner at 518-435-7129.

Sincerely,
Gary Sparano

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What This Industry Needs: Better Means For Educating The Lab Technician

Recently designated by the U.S. Congress as our nation's official Museum Of Dentistry, The National Museum Of Dentistry (NMD) in Baltimore, Md, a part of the Smithsonian Institute, houses some of the best documentation on the history not only of dentistry in this country, but of dental labs and dental lab technician education as well—according to Avis Smith, Professor Of Dental Lab Technology at The New York City College Of Technology, in Brooklyn, New York.

Among the interesting tid-bits that can be picked up at NMD, as Professor Smith points out, is the fact that “Yes, there really was a Dr. Greenwood, allegedly a dentist, who made the best set of dentures that George Washington, our first President, ever had. However, contrary to the widely-circulated myth, they were not wooden, they were actually made of ivory—which explains why they stained so readily.”

Where the NMD stands today is the very piece of land where once stood the first College of Dentistry in this country.

Smith says that the earliest dentists in America were Europeans. Had they been from Africa, he notes—for example, had they taken their training in Egypt—they would have emphasized the use of gold in the patient's mouth. How the Egyptians came to understand the bio-compatibility of gold is a mystery—the evidence merely suggests that somehow they arrived at an intuitive grasp of its suitability as a dental surrogate and used it widely.

“Europeans emphasized other materials,” Smith explains, “such as Washington's ivory with its spring mechanism. They were also big on maxial-facial dentistry.” Thus, another little known trivium which Professor Smith shares, “is the fact that Sigmund Freud had a maxial-facial prosthesis to replace facial/cranial parts, resulting in the theory that this is what led to his being called ‘a monster.’”

In any case, in the early days, it was the dentist who made the dental pieces—the dentists were the first dental technicians. Of course, that begs the question as to who exactly were the dentists. In the halls of the New York College Of Technology, one can browse interesting display cases housing artifacts of the earliest dentistry and dental mechanics in this country. Among those glassed treasures is a copy of Paul Revere's first

advertisement as a dentist, placed in the *Boston Gazette* on September 19, 1768.

According to Avis Smith, the need for dentists, and the pressure on dentistry to be more sophisticated, became greater and greater as human life expectancy increased. As dentistry evolved into more of a ‘healthcare-scientific’ field of study, the volume and nature of the work for which the dentist was responsible, grew exponentially.

In turn, this brought about the need for specialized talent to assist dentists with their work—hence the rise of the technician position, namely to aid the dentist in the making of dental pieces. Not surprisingly then, the earliest training for dental technicians was an apprenticeship where, originally, the mentor was the dentist.

As time went on and the volume of work became such that a separate room, a lab, had to be set aside for fashioning the dental pieces, the dentist got more and more distanced from the lab work, and the more experienced dental lab technicians began taking over the task of training the newcomers on how the case work is done. In sum, the training of a dental lab technician may be a rather pure, modern day example of how the old medieval apprenticeship system worked.

In this country, dental lab technician training did not become institutionally formalized as an academic program until 1947, when the first dental tech school was founded right here in Brooklyn, New York. Now known as the New York City College of Technology, it is considered to be the oldest, the first of its kind and the largest in the

country, and the first school of dental lab technician training accredited by the ADA and the National Association of Dental Labs.

And actually, it was the US Air Force that started this school and provided the first equipment, for the Air Force had been using the facility to train its own personnel in the making of dental lab pieces for its servicemen.

Originally called Central Community High School after the Air Force left, it was where Dental Mechanics were taught, as the field was known—the name Dental Technology did not come into usage until sometime in the late 1960s or early 70s.

In the 1960s, there was intense interest in Dental Mechanics throughout the country as students were eager to get this train-



ing as a pathway to a good career, and consequently the field prospered. So much so, that many private schools opened up for the training of dental lab technicians, such as the Kerpel School Of Dental Technology which flourished in Manhattan for a few decades, and the DATE program (Dental Auxiliary Teacher Education) was founded at Southern Illinois State University, to train technicians to be teachers of dental lab technology.

However, along with the decline and fall of manufacturing in this country, the field of dental lab technician education began to witness a gradual reversal in its decades-long trend of growth. Professor Smith elaborates:

As our economic system became more service-sector dominant, fewer and fewer students have been coming forward to select this work as their career.

At the same time, advanced technologies, such as CAD/CAM, the rise of the large lab with its assembly-line approach, changes in materials, and the revolutionary developments in how we make what we make, all had a big impact on us.

Materials have changed—there is a far greater variety for doctors to choose from to service their patients.

Implant technology, such as bone grafting, taking bone from a hip to support the bone in the oral cavity to secure implantations, is revolutionary.

Advances in equipment alone account for ‘big time’ changes in this field—we used to solder parts together, today we have laser welders and we look at our work through LCD terminals, much like micro-surgeons.

The field has gone from a ‘mom and pop’ industry working out of basements, to a highly mechanized, highly competitive big business contributing about 4 billion dollars annually to our national GDP.

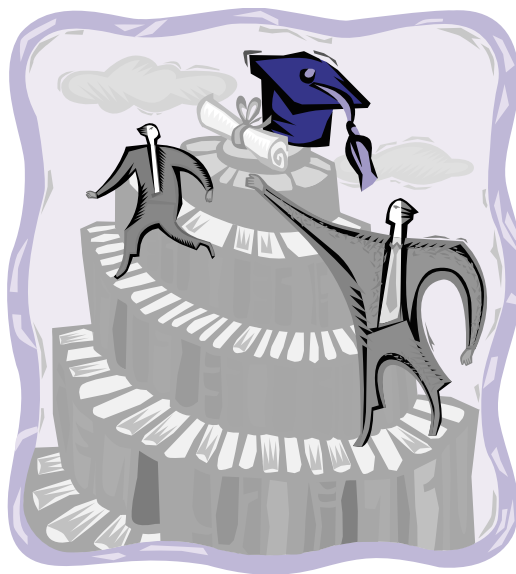
Then too, arguably, there is the impact of outsourcing on our field.

As a result of all these factors, dental lab technician education has changed dramatically in the last few years. How, exactly? Avis Smith responds as follows:

All these advancements in the field of dental lab technology must be taught as part of the technician’s education, meaning that we now require better means for teaching the technology and better means for preparing technicians to go into the kind of labs they are going to find out there today, and to be more proficient in those labs.

The pressure is on us to train skilled artisans who are really good at what they do artistically, and, at the same time, are up-to-date with the latest computer technology that is, and that will be, in use in dental labs.

If anyone is qualified to make such an assessment, Avis Smith surely is. He started in this field in 1966, in a work-study program which put him at a plaster bench in Jamaica Queens as a high school student. Upon graduating, he had the extremely good fortune to work in a Queens dental lab under an 80-year old lab owner-operator named Harold McMillan who taught him, in Avis’ words, “really, really well.” MacMillan gave him large amounts of time, and equal doses of patience, and helped



him develop into a highly-skilled technician. Smith went on to work for a number of different labs, got his College degree along the way, and served some rather interesting clients, including the comedian Art Carney’s family.

With his teaching license and status as a Certified Technician under his belt, Avis Smith landed at the Department of Veterans Affairs Dental Lab in Brooklyn, where his Dentures, Crown & Bridge work, Ceramics, and so forth, brought him some very high recognition—over his 21 years there, he became rather well-known as a top quality technician.

Thus, it should come as little surprise that, to date, Avis Smith has two patents filed under his name, and 1 more patent that is pending. Among his significant

contributions to the field of dental lab technology, is his development of an “acid-etched-bridge” for lower bridges with a diasthema, for which he came up with a whole new design that dentists, up till that point, had never experienced and marveled at. Commenting on Smith’s invention at the time, a Professor at NY University’s School Of Dentistry remarked that he “never saw a bridge like this before—this is really something.”

Nine years ago, Smith took his talents into the classroom, where he has been working with students who are “innate artists,” as he calls them, as well as “those students who appear to have little or no artistic talent, yet can be developed into good, if not great technicians.”

Those who graduate from his program of dental lab technology education tend to fall into one of three categories: either they become dentists, or they go to work for mid to larger-size labs, or they open their own labs. His teaching success rate is rather high.

At this point in his obviously distinguished career, Avis Smith would like nothing better than to address a huge audience of lab owners, to point out how it is in their enlightened self-interest to get involved with schools like his, assisting them:

- to get the larger facilities they need, to get the additional space they need, to get the handicap accessibility they need, to get the laser welders they need, to get the modern equipment they need, to get the supplies they need; and,
- to devote some of their time, on a volunteer basis, to come into his classrooms and speak to the lab tech students.

Because it is patently self-evident that labs desperately need technicians who are qualified to service the top caliber of work they are getting from the dentists, it only makes sense, in Smith’s mind, for the lab owners to reach out to schools like his and forge partnerships. Partnerships aimed at providing the schools what they need, so the schools can provide what the labs need.

And on that issue, the Professor is perfectly clear. Lab Tech Schools like his need better means for educating the lab technician, better means for preparing technicians for how lab work is actually done today, and better means for preparing technicians for the use of the leading-edge lab technology of tomorrow.

In short, schools like his need the labs to really get behind and aggressively support the work of lab technician education.

A Hollywood Smile For Everyone

Imagining The Dental Lab Of The Future

By Leonard Korets, M.D.T., C.D.I.T.

Remember the Sandra Bullock/Sylvester Stallone movie *Demolition Man*, where the lead character is frozen for 40 years, then wakes up to find himself in a world 40 years in the future from when he was first living?

“Imagining things that will be there” is what we’re told this flick is all about.

Lab owner Leonard Korets has been doing some “imagining of things that will be there”—in the dental lab of the future.

And here’s some of what he sees in dental labs that will be commonplace in the year 2020.

Looking much like an airport metal-detecting scanner, the dental patient will walk into a scanning imager-processor that will detect myriad conditions—anything from broken arm to dislocated hip to herniated disk. In the dental setting, the WBS/DP (Whole Body Scanner/Dental Processor) will be programmed to focus exclusively on the patient’s teeth. Within the amount of time it takes to walk from one end to the other of an airport metal-detector, the WBS/DP will capture every single condition of the patient’s teeth. The WBS/DP will print out images of the teeth that far surpass anything the finest current X-ray technology is capable of.

What’s more, the WBS’s CPU (Central Processing Unit) will produce a textual diagnostic analysis and print out, telling patient, physician and dental lab technician, in words as well as pictures, everything they could possibly want to know about the scanned teeth, from root conditions, to bone density, to wear and tare resultant from bite pressure, to the most minute (heretofore un-detectable) decay, etc., etc., etc.

Real-time/long-distance-processing (RT/LDP). In 2020, the patient, their dentist and the lab technician function as a team. When the lab technician is not located directly in the dentist’s office, physician and technician will be present by RT/LDP videoconferencing. One person scans the patient’s mouth, both persons see and discuss the resultant images, talking to each other as though they were in the same room.

In fact, the RT/LDP device is such that each of the two parties actually feels like they’re on the opposite side of the dental chair from the other party, the way an I-MAX cinema leads your senses to feel as if you are right in the movie screen setting.

3-D measurements. An additional scanner—a simple hand-held scanning device smaller and thinner than today’s most compact cellular phone, called a PSSD (Placement Sensitivities Scanning Device)—is used to provide the dentist and technician precise measures of mouth, teeth and force pressures, down to micro-microns of measurements that are unimaginable in present day thinking. Every littler corner, every little incomprehensible detail of the mouth and of how the teeth ‘fit’ in the mouth, are captured by the PSSD and transmuted into digital data, which in turn are translated into images and English-language text.

Gone will be the mold. No need for molds. The dentist and technician use the data from the PSSD—that scanner will replace the mold. The PSSD is hard-wired to a CPU which reads the patient’s data provided by the “scan” and in effect “makes the mold” without actually making a mold, then translates “the mold” specifications to another CPU, to which it is also hard-wired, for actual production of the piece.

To understand how the piece is made, it helps to have some sense of how hard plastic bottles are made today. Plastic bottles of all different types and shapes that can be found on the supermarket shelf, start with a computerized set of instructions—a scan or image, if you will—of how this particular bottle is to be shaped, so that the container for Cranberry Juice is not shaped like the ketchup squeeze bottle, and that each container is precisely what it’s supposed to be.

Thus far, we’ve been talking about the denture aspect of our business. But what about the C, B & I (Crown, Bridge and Implant) side? Here, we’ll find very similar concepts. The CAD/CAM of today is a start—but only a hint of, a glimpse into, the general direction this field will take in 2020.

Instead of making a base/shell by today’s CAD/CAM standards, the **2020 lab will take the shape of the C or B or I directly from a scanner that will be controlled by the DTWK—the Dental Technology Whiz Kid.** Lab technicians of the future will be highly skilled in the operation of computerized scanning and input/output devices, much like the operation of Video Games and Video Game consoles. The DTWKs will “steer” panels (consoles) that allow for artistic manipulation of the computerized “mold-creator” devices.



Thus, along with their exceptional—highly tech-savvy—computer talents, the DTWKS will have to be artists as well.

In fact, in the year 2020, most of the lab technicians will have, or be in the process of getting, their degrees as a DLAR – Dental Lab Artist in Residence, the equivalent of a Master’s degree in Dental Arts. It will take artistic creativity as well as artistic imagination to make the computerized “drawings” from which C, B & I work will be done.

Something from nothing. When a tooth is broken off, and the piece is missing, what do we have to work with? Obviously, we have only the remaining piece of the tooth. But not in 2020. In 2020, the TACD—Tooth Architecture Creation Device—will be able to reproduce exactly what the tooth was like before it broke off. The TACD actually creates the past out of nothing, akin to magic—it “grows” a picture of the tooth, as it was, a whole from nothing, including the bite and the alignment, even if the alignment was “off”—it will reproduce it in the “off” way, just as it was before it broke off.

Picture an architect’s office. You own an oddly-shaped piece of triangular corner property and you’re looking to build a commercial office structure there. The architect has devised several different options, and you are asking him about, and he is suggesting to you, various “what if” scenarios. By simple rotation of zoom functions on this computer application, the architect can manipulate the drawings of the building to show you how the building might fit in that triangle, in all different configurations/options.

So too, the lab technician will be able to provide the dentist and the patient, all different kinds of options on how the broken-off tooth might be replaced, starting with the original design (what WAS there, exactly as it was there before it broke off, even with all its original misalignments), to virtually any feasible arrangement the physician and patient and technician might conceive.

Materials. The materials that labs will use are going to be so different that we cannot at this point imagine, and hence can’t even describe them. Just as the dentist of 1960 could never have imagined CAD/CAM Zirconia, so too we can’t tell you the investments out of which C, B & I pieces will be fashioned in 2020.

However, we can mention about shade detection. Read outs from the SHDSD (Shad Detection Dental Scanning Device) will take a quick look—lasting no more than a second—at the patient’s tooth shade, and instantaneously, at the speed of electricity, will read out the exact shade and send the data directly to the CPU of the CAM equipment, dictating the shade of the piece to be produced. No longer will there ever be a need to add stains or to play with shade in any way whatsoever. The perfectly shaded finished product will be delivered on the first time out.

Also, we can state unequivocally that metals will be eliminated from the lab of the future.

Porcelains may still be around, but only as part of the aesthetics of giving everyone a “Hollywood smile.” The materials names that will be commonplace in the lab of 2020 are names we don’t even know today—and only the financial aspect of these materials will keep them from becoming the commonplace investments of tomorrow.

Transformation. The lab of 2020 will be a mar-

velous amalgamation of several industries all in one. Computer Technology, highly specialized artistic sculpting capacities, materials science, materials engineering, chemistry, and more – they will all come together in the lab to produce the perfect “Hollywood smile.”

Jobs. Contrary to the consternation of many of today’s technicians who fear that tomorrow’s technology will eliminate their jobs, the technician will play an absolutely essential role in the lab of the future—while on the one hand, the lab of the future will definitely be more about machinery than people, on the other hand, it cannot work without highly-computer-skilled, highly-artistic technicians. Quality work will be well rewarded, and jobs will be there for those who have the talents required, such as the artistic creativity, the computer wizardry, the imagination, the materials knowledge, and so forth.

Venues. In the year 2020, Dentistry is as likely to be practiced in shopping malls as in traditional dental offices, and the labs will likewise be located in the most convenient locations where you shop.

Amenities. If you know anything about the headquarters of Yahoo or Intel or Google or other technology, especially “dot.com” companies, you’ll have some idea of what the dental lab of the future shall be. Play rooms, with billiard and tennis tables, full-service gyms, Jacuzzis, steam rooms, saunas, amenity-filled lunch rooms—these are the features that will typify the typical lab of the future. And if you have any doubts about this, you might want to check out Classic Dental Arts Laboratory in Queens, New York, where a brand new Jacuzzi, steam room, fitness studio and other such employee benefits are already in place.

Leonard Korets, M.D.T., C.D.I.T., President of Classic Dental Arts Laboratory Inc., a full service dental lab for cosmetic, general and implant dentistry located in Richmond Hill (Queens), New York, welcomes stimulating discussions around his imaginations for the future of dental lab technology and can be reached for that purpose at (718) 441-5557.



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A Tax On Cosmetic Dentistry

It's Coming to New Jersey. Will New York Be Next?

In most states and at the federal level, it's very hard to get a law passed. But in New Jersey, it all depends. On June 24th of this year, the State of New Jersey passed into law a 6% Gross Receipts Tax on Cosmetic medical procedures performed in the state.

Why was this done? What does it mean? Who will pay this tax? Given that the statute "shall include cosmetic dentistry" but left the term wholly un-defined, what dental services are to be taxed as a result of this Act? And perhaps most pertinent of all, will New York and other states follow suit? These and other related questions are the subject of much debate in our industry.

Here's what we have come to understand from sources who have asked to remain anonymous. Suffice to say that we believe these sources to be trustworthy.

Apparently, there was a whirlwind, last minute push to pass legislation that would help close a gap in New Jersey's fiscal 04/05 Budget. The NJ Governor sought a more than double increase in the state allocation for charity care rendered by hospitals, from \$200MM to \$580MM. The Assembly needed to find money to fill the gap. Someone came up with the idea of taxing cosmetic dentistry. A bill was hastily thrown together. On June 23rd, the date before the vote, the language of the Act had not even been worked out. In fact, of the three dentists who serve in the State Legislature, we are told that at least one, for sure, and possibly all three, were totally unaware of the bill. One dentist Assemblyman, a star in the Democratic caucus, only learned about the bill from an industry lobbyist at 9:00 am on the morning it came to the Assembly floor and passed by one vote. Likewise, two physicians who serve in the NJ Legislature were also completely in the dark about it. Indeed, the entire health care industry was taken by surprise.

It appears-and those who watch the New Jersey political scene might say-that not a lot of thinking went into the idea of the tax, that it was railroaded through the Assembly. Some political pundits have opined, off the record, that the legislation reflects the growing enmity between the medical provider community and the Democrats in the state, who seem to do battle regularly. They've been drawing lines against each other on a host of issues, such as medical malpractice legislation, and cosmetic dentistry just got caught in the cross fire. It may be safe to say that the new tax is not intended as a shot at dentistry-"cosmetic dentistry" was just a phrase used.

Included in the tax are alterations of any otherwise normal structure. Arguments over what is to be covered but the term "alterations" are already underway.

The statute defines that:

- Cosmetic medical procedures
- Reconstructive surgery
- Dentistry preformed to treat disease or trauma-related

symptoms or restorative functioning, are not to be excluded from the new tax. Thus, orthodontics, caps, crowns, bridges, and so forth, would not be subject to the tax.

It's critical to note that this is a Gross Receipts Tax, and therefore, technically, not a sales tax. That is to say, the consumer does not pay the tax as an add-on to the price of a purchased item, as is the case when they walk into a store and make a purchase. Rather Gross Receipts Taxes are paid by the company making the sales-the company must take the total amount

of their sales in a given period, e.g., quarterly, and pay a given percentage of that total to the state. And normally, such a receipts tax is not passed on to the consumer.

However, a funny thing happened on the way to the floor of the Assembly. We understand that the Gross Receipts Tax on cosmetic medical procedure was made an exception to the rule-which it can be passed thru to the consumer, making a bit of a mockery of the term "Gross Receipts Tax"

in this instance. It would seem that this tax, by whatever name it's called, is in fact a sales tax.

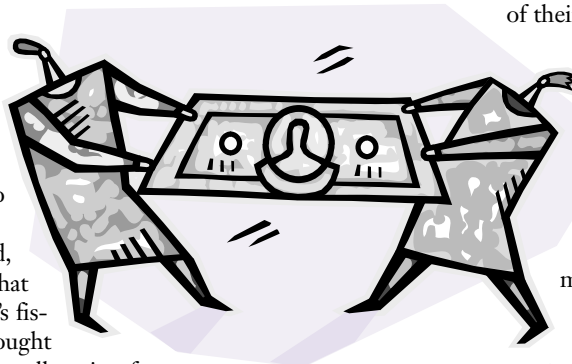
But there's good news. Because it's fairly clear-and all side agree-that this Tax was intended to hit cosmetic medicine and not cosmetic dentistry, the power brokers in the state have been working amicably with the lobbyists for the dental industry to limit the impact of this tax on dentistry. The way this is being achieved is through definitions-i.e., by getting the New Jersey Department of Treasury, Division of Taxation, to agree on what will and will not be defined as taxable under this statute.

Thus far, the negotiations seem to be proceeding favorably for dentistry. As of this writing, the impact of the tax on pure dentistry seems to be limited "whitening and bleaching" procedures. It would appear that the NJ Treasury Taxation Division will agree to exempt from the tax any expense which is a legitimately deductible medical expense on the U.S. Income Tax Return (Form 1040) under Federal IRS regulations.

Of course, nothing is simple when it comes to tax law. Lobbyists for the dental industry continue to fight for a number of fine points, such as post-orthodontic-whitening-and-bleaching - arguably, that's part and parcel of an orthodontic procedure and therefore should be exempted from the tax.

Ultimately, the dental industry's best hope out of all this is to get bureaucrats to agree that it will be the dentist who decided, in the final analysis, what is functional and restorative health care dentistry as opposed to cosmetic medicine.

Regardless of what is in store for the citizens of New Jersey in terms of their new Gross Receipts (read: Sales) Tax on cosmetic medical procedures, that really burning issue is this-now that the Garden State has tried it, how many other states are going down this road, and what will the impact on dentistry and the dental lab industry?!



Retainer Systems in Removable Partial Dentures

By William M. Baum MDT CDT, Instructor, Department of Prosthodontics, New York University, College of Dentistry

Clasps, precision attachments, semi-precision attachments, and bars are removable partial denture retainer systems. Retainer systems are used in prosthetic dentistry to facilitate the selective placement and removal of prosthetic components. These components can be fixed partial dentures, as in segmented bridgework, combination fixed and removable partial dentures, or implant supported complete dentures. There are many design variations of retainer systems each with its own advantages and disadvantages. They can be intracoronal or extra coronal. An understanding of a design's pros and cons can make the difference between success and failure when utilizing retainer systems.

All retainer systems must provide three basic functions. Bracing is the first function and is the ability of the retainer system to stabilize lateral forces. A large percentage of a retainer system's design is devoted to this purpose. Providing bracing is critical because if any component of a prosthetic device can move laterally it may promote loss of supporting structures such as teeth and bone. The second basic function is support, which is provided by the rest and minor connector. Support is the ability of the design to transmit occlusal force applied to the device vertically onto the abutment teeth. Without this component occlusal forces may be transmitted to the soft tissue and residual ridges. Retainer systems must also provide for retention or the ability of the prosthesis to keep itself in a predetermined place until it is intended to be removed. Retention is important because if a prosthetic component does not remain in its predetermined position there will be torquing forces on the abutments that are detrimental to a favorable prognosis. Only a small percentage of the retainer's design is devoted to retention; this is all that is required when a dual or curvilinear path of insertion is employed.

Clasp systems are designed by the dentist and manufactured in the laboratory. These systems consist of a guide plate, which rests against a prepared guide plane to help support tooth or crown. This will help to guide the components to their predetermined position along a selected path of insertion. The guide plate terminates with an occlusal rest that seats in a shallow rest seat prepared on an abutment. A clasp system must also possess buccal and lingual arms that are in correct relation to their corresponding height of contour to allow for bracing and retention. Reciprocation is a function of a clasp system that protects a supporting tooth from being torqued each time a prosthetic device is inserted and removed. As the retentive one third of the buccal arm contacts the tooth during placement the opposing or reciprocal arm also makes contact with the opposite side of the tooth so as to hold it in place until the appliance is completely seated. There are many different ways to design clasp systems along with different materials that can be utilized enabling the dentist to control the amount of rotation, bracing, and retention.

Bar systems are laboratory fabricated and can be round, ovoid or rectangular in shape. They are utilized with either a metal or plastic retaining component referred to as the rider.

The shape of the bar along with its placement in the dental arch will control the amount of rotation this design will allow. The type of rider as well as the number of riders employed controls the amount of retention provided. A bar system may also be employed to provide cross arch stabilization.

Attachment type retainer systems are either intracoronal or extracoronal. Intracoronal attachment systems are either precision or semi-precision. Precision attachments [fig 3] are manufactured and utilized in a removable partial denture or as an interlock between two sections of a fixed partial denture. They are manufactured to fit together with precise tolerances of one to one-thousandth of an inch. Precision attachments are self-contained that is all the necessary functions of a partial denture i.e.: bracing support, and retention are provided for within the device. Precision attachments also use a lingual sleeve in order to augment the bracing function. The alloys used in construction of precision attachments provide for controlled wear between rest and rest seat. This ability to control wear can prevent premature wear in contrast to a semi-precision rest system with dissimilar metals usually between the rest and rest seat. An assembled precision attachment allows for movement in only a superior-inferior direction and does not provide for rotation. Therefore this system is usually not recommended when designing removable extension base partial dentures since it can create a cantilever situation. In an extension base removable partial denture the force created by the lever arm would torque the supporting abutment teeth without some form of stress relief provided from the design of the retainer system. Thus intracoronal semi-precision rest systems are designed with various occlusal outline forms, varying proximal taper, as well as different gingival floor contours. These variations alter the amount and direction of rotation to provide stress relief.

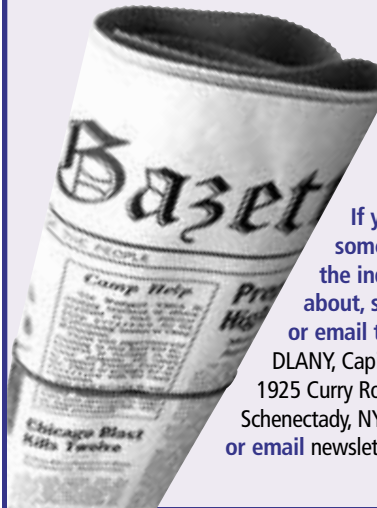
Semi-precision attachments [fig 4] can vary in design and in degree of precision depending on the skill of the technician. The occlusal outline form can be varied in order to alter the degree of rotation permitted around the horizontal axis of rotation. Different alloys can be used to control the wear between the rest and rest seat. Semi-precision rest systems do not provide retention; an external clasping or spring device is added for retention. The deep rests provide for bracing and support. Additional bracing is added through the use of a lingual clasp arm on a surveyed and contoured lingual surface. This is used to reduce the wear between the rest and rest seat.

Extracoronal attachments [fig 5] are available in varying designs. When extra coronal attachments are selected one must be sure all of the necessary functional qualifications are met. These attachments are seen as some form of stud, ball and socket, or spring loaded plunger (pawl). They are usually connected to the near proximal zone of a supporting crown. The near proximal zone of a tooth is the surface of the tooth, either mesial or distal, which is closest to the edentulous area. Conversely the far proximal zone is the tooth's surface opposite the edentulous area. One disadvantage of extra coronal attach-

Continued on Page 8

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Sterngold Announces ERA Implant Certification Course Schedule for 2005



Attleboro, MA- Sterngold announced today that they are offering four ERA Implant Certification Courses in 2005, directed by Joe L. Carrick, D.D.S of Houston, Texas. These one-day courses feature clinical lectures, as well as a live surgery. The courses will be held on June 25, July 30, September 10, and October 22 at the Amara Center, owned by Sterngold, which offers the most advanced knowledge and training possible. The program is designed to train other dentists for the ERA implant. The program is the most innovative and comprehensive FDA for permanent application.

The fee for the course is \$895. This fee includes dinner and hotel accommodations for one night on Friday and meals during the course on Saturday (breakfast and lunch). Eight (8) CE Credits are available. Availability is limited. Register today by calling Rachel Jefferson at (800) 243-9942 or (508) 226-5660, or email rachel.jefferson@sterngold.com

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Retainer Systems in Removable Partial Dentures

Continued from Page 7

ments is that the fulcrum or point where most of the force is applied is placed three to five mm horizontally from the long axis of the supporting tooth thus increasing the cantilever potential of the case design. An extracoronal attachment system can also be employed over a natural root or implant when designing overdenture cases. In this design the fulcrum is placed directly over the long axis of the supporting tooth or implant.

There are many factors for the dental team to consider when utilizing retainer systems. One must take into consideration jaw relationship, residual ridge form, occlusal schemes, major connector designs as well as the patient's desires and dexterity. Retainer systems, when properly utilized, can provide a dental patient with years of excellent service, however when misused they can aid in the destruction of teeth and supporting structures.

Retainer system selection is often left to the technician. Although some technicians are very knowledgeable with the intricacies of these cases, the dentist must select the system employed since they have examined and treated the remaining soft and hard tissues in the patient's mouth and should be familiar with the patient's specific problems.. Therefore it is paramount that both dentist and technician to work and learn together as a team in order to fully understand the complex world of retainer systems.

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| Apr. | 320.00 | 198.00 | -122.00 |
| May | 241.00 | | |
| June | 228.00 | | |
| July | 224.00 | | |
| Aug. | 214.50 | | |
| Sept. | 209.00 | | |
| Oct. | 212.00 | | |
| Nov. | 213.00 | | |
| Dec. | 207.75 | 180.00 | -27.75 |

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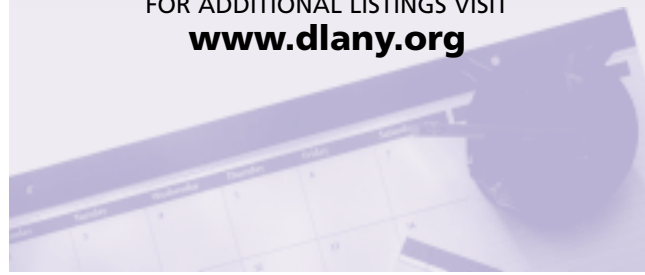
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