

CLINICAL Impressions®

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Thriving vs. Surviving: Financial Management for t



by Richard E. Boyd, D.M.D., M.S.



Dr. Richard Boyd, in private practice in Columbia, South Carolina, for 12 years, has established a solid clinical reputation as well as one for applying sound business principles and practices to the profession of orthodontics. He has lectured throughout the U.S., Europe and Canada and will be a featured speaker at the 1997 AAO meeting. He is pictured with his wife, Stacy, and their children, Ali, Mallory and Reb.

entistry enjoyed a great year in 1995. All segments of the profession showed progress in increasing profit and reducing overhead except one – orthodontics (*Blair-McGill Advisory Newsletter*, May 1996). While all segments of dentistry struggle to regain the profitability of the mid-'80s, our specialty has yet to realize the significance of controlling upwardly spiraling costs. If we don't start employing sound business practices to manage orthodontic health care delivery, we will not be able to control our destiny. Like pharmacists and optometrists, we will see big business doing it for us.

The message I would like to convey to you is to take that important first step in improving the way you manage the financial aspects of your practice. If you already have, congratulations. If not, then let me give you encouragement to do so. It all starts with a goal. My vision is simple: to enjoy a high quality of life, impervious to outside influences, while maintaining a profitable practice and providing the best care available. The means to fulfill this vision are grounded in managing the business aspects of my practice as consciously and conscientiously as I manage clinical results.

Where Did We Go Wrong?

So how is it that we have lost ground so fast in effectively managing our practices? I see three significant factors: 1) a reluctance to increase fees; 2) excessive overhead; and 3) a relatively high standard of living.

Reluctance to Increase Fees. While it is clear that raising fees is the single most important step to increasing profitability, we as orthodontists have not raised our fees over the last several years to compensate for increased expenses. We can be proud of the part we have played in cost containment for the public while providing the highest standard of care available anywhere in the world. Despite having been continually advised how important it is to raise our fees systematically, however, we continue the trend. This trend has perpetuated our current dilemma.

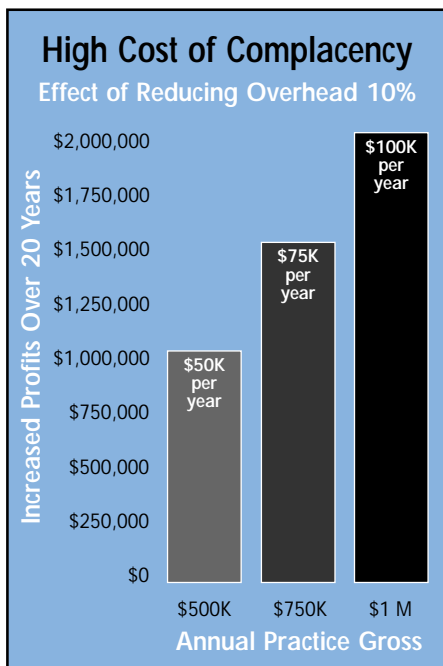
Excessive Overhead. Over the last ten years, we have gradually surrendered to absorbing the rising cost of care – the costs of implementing government-mandated regulations, of accepting insurance assignment and of staying technologically current. Orthodontics was the only segment of the dental profession that suffered a practice profitability decline in 1995. For the first time in six years, our profitability dropped below 40 percent. The dramatic rise in overhead from 57.8 percent in 1994 to 60.5 percent in one year's time should be a wake-up

ie '90s and Beyond

call for all of us.

Relatively High Standard of Living. I believe we have been lulled into complacency by comparatively high personal salaries. We provide an important service to the public, and when we do it well, we are rewarded by a level of financial compensation beyond the dreams of most Americans. This blessing has also been part of our demise. Such complacency costs us tremendously over the life of a practice. Consider what it would mean to save \$50,000 per year by lowering overhead 10 percent (e.g., from the average 60 percent to a more reasonable and certainly very achievable 50 percent) on a \$500,000 gross practice income. Not even considering inflation and an annual fee increase, this savings translates into \$1,000,000 over a 20-year period. *And, remember, this is all additional income.*

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The Essential Building Block for a Well-Managed Practice

If you would like to receive copies of the Summary and Detailed Statements shown in the article, request them from ORMCO by calling (800) 854-1741, Ext. 7575 or (714) 516-7575. Please make a voice mail request and provide your name, mailing address and phone number.

Income and Expense Statement					
Summary					
		Month to Date	Percentage	Year to Date	Percentage
		\$	%	\$	%
Business Done (Charges)					
Total Business Done					
Professional Income (Receipts)					
Net Professional Receipts					
	Guideline				
Less:					
Facility Expense	8.7				
Staff Expense	17.7				
Lab (Salary Included)	3.9				
Business Taxes and Interest	1.2				
Business Insurance	0.4				
Miscellaneous	0.9				
Equipment	1.7				
Clinical Supplies	5.5				
Clerical Supplies	1.8				
Marketing - Doctors	0.9				
Marketing - Patients	2				
Auto	0.5				
Fees	1.1				
Con't. Education - Dr.	0.9				
Fringe Benefits - Dr.	0.5				
Total Overhead	47.5*				
Total Income (Profitability)	52.5				

* Good range 48 - 53% overhead for mature practice (e.g. > 5 years in practice)

Dr. Boyd

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The Good News: Outlook for the Next Decade is Positive

Fortunately, we have a healthy outlook for the next decade and beyond. New graduates cannot keep pace with the number of retiring orthodontists, which yields an improved ratio of patients to doctors. Given the high birthrate in the late '80s and early '90s, coupled with, for all the discussion, comparatively little penetration of managed care, orthodontics affords a significant opportunity at this time. This window of opportunity allows us to take a hard look at our practices and to take action – action needed now to thrive or later, to survive. For the orthodontist who chooses not to procrastinate, these will be the best of times.

Reaching Your Goal: Combining Clinical Excellence with Profitability

How do you achieve the balance of a well-run, efficient practice that produces high-quality clinical results and patient care. For me, there are four fundamental requirements: 1) a *can do* attitude; 2) increased production with reasonable and consistent fee increases; 3) clinical and administrative efficiency; and 4) control of expenses. While each of these factors is essential to a well-managed practice, this article will focus on analyzing and controlling overhead.

Clinical excellence and patient-centered service remain our first priorities. It is my opinion that every orthodontist in private practice – without sacrificing quality – could be working toward a 45 percent overhead, with a range of 48 percent to 53 percent being acceptable. Many successful practices that deliver excellent patient care are well below this range, while retaining a top-notch staff, using the highest-quality products and enabling the doctor to enjoy a rewarding family life.

Plan of Action

Attaining a goal of 48 to 53 percent overhead requires a plan of action. The essential building block for evaluating profitability is the Income and Expense Statement. Some accountants refer to this statement as a Cash Flow Analysis, others as a Profit-and-Loss Statement. By any name, it is the heart of a well-managed practice. I offer the example I have developed as a format which you can modify to suit your needs.

There are two basic parts of this statement: a Summary Statement that provides an overview and a Detailed Statement for in-depth analysis when needed. The Detailed Statement is comprised of 15 major categories that can be broken down into a varying number

Statement of Income and Expense					
Detailed Statement					
	Month to Date	Percentage	Year to Date	Percentage	
	\$	%	\$	%	
Business Done (Total Charges)					
Less Adjustments (Courtesy, etc)					
Total Business Done (Net Charges)					
Professional Income					
Main Office					
Satellite #1					
Less: Returned checks					
Refunds (Transfers, etc.)					
Net Professional Receipts					
Less:					
Facility Expense					
Rent - Main Office					
Rent - Satellite #1					
Bldg. Maint., Repairs - Main					
Bldg. Maint., Repairs - Satellite #1					
Yard Work					
Utilities - Main					
Utilities - Satellite #1					
Telephone - Main					
Telephone - Satellite #1					
Total Facility Expense					
Staff Expense					
Clinical Salaries					
FICA - Clinical Salaries					
Clerical Salaries					
FICA - Clerical Salaries					
Administrative Salaries					
FICA - Administrative Salaries					
Uniforms					
Retirement Plan					
Gifts					
Registration, Cont. Ed.					
Travel, Cont. Ed.					
Accommodations, Food					
Unemployment Taxes					
Major Medical Insurance					
Total Staff Expenses					
Lab					
Lab Salaries					
FICA - Lab Salaries					
Outside Fees					
Supplies					
Total Lab Expenses					

	Month to Date	Percentage	Year to Date	Percentage
	\$	%	\$	%
Business Taxes and Interest				
Sales/Use				
Property				
Other Business License				
Interest				
Total Business Taxes /Interest				
Business Insurance				
Property - Liability				
Malpractice				
Auto				
Workers Comp.				
Total Business Insurance				
Miscellaneous				
Mobile Phone				
Magazines and Books				
Refreshment				
Children's Area				
Misc.				
Total Miscellaneous				
Equipment Expense				
Depreciation				
Lease				
Maint. Dental Equip. (x-ray, etc.)				
Maint. Office Equip. (copier)				
Maint. Computer (Orthotrac)				
Labor				
Total Equipment Expense				
Clinical Supplies				
Photography				
Bands and Brackets				
Dental Supplies				
Instruments				
Misc.				
Total Clinical Supplies				
Clerical Supplies				
Postage				
Printing, Forms, Stationery				
Misc.				
Total Clerical Supplies				
Marketing - Doctors				
Gifts				
Lunches/Staff				
Seminars				
Promotion				
Total Marketing - Doctors				

of subcategories depending on your need to analyze certain aspects of your practice spending. In the beginning, it is better to have too many subcategories than too few. This allows you to pinpoint problem areas in order to take corrective action. Once your expenses are in line with your targets, you can reduce the number of subcategories in the Detailed Statement if you wish.

The Detailed Statement is one that I developed based on a logical approach to tracking particular expense categories. While I certainly suggest your making modifications to my format for your specific purposes, there are important reasons why certain categories are broken down the way they are. For example, I think it is critical to monitor clinical and clerical staff expenses as separate categories in order to maintain the appropriate ratios. Also, since I maintain that ours is a patient-centered practice, I want to ensure that the monies spent on marketing always reflect that view; thus, I segregate patient-oriented marketing expenses from those spent on referring dentists.

Now that I am comfortable with my expenses, I rarely need to refer to the Detailed Statement; however, it is always there for my analysis if I see expenses creeping up or if I just need a quick

“Some practices now experience a 2:1 ratio in clerical-to-clinical staff costs. I believe this ratio should be about 1:1.”

study of a particular aspect of my practice. For example, when it came time to consider buying an imaging system, I needed to estimate what I would be saving annually in photographic film and processing, equipment and supplies. The Detailed Statement *continued on following page*

	Month to Date	Percentage	Year to Date	Percentage
	\$	%	\$	%
Marketing - Patients				
Newsletter/Postage				
Advertising, Promotion				
Total Marketing - Patients				
Auto				
Depreciation				
Lease				
Mileage Reimbursement				
Expenses				
Total Auto				
Fees				
Legal				
Accounting				
Billing/Collections				
Consultants				
Misc. (License Renewal)				
Total Fees				
Cont. Ed. - Doctors				
Registration				
Travel				
Accommodations/Food				
Dues/Journals				
Total Cont. Ed. - Doctors				
Fringe Benefits - Doctors				
Medical Reimbursement				
Cafeteria 125(k) Plan				
Major Medical Insurance				
Disability Insurance				
Life Insurance				
Total Fringe Benefits - Doctor				
Total Overhead				
Total Professional Income				
Other Income				
Lectures, etc.				
Net Income				

Net Income					
Doctor's Salary					
Remainder					
Less:					
Retirement Plan					
Advances					
Contributions					
Federal Taxable Income					
Less:					
Dividends Paid					
Non Deductible Insurance					
Corporate Federal Tax					
Other Non Deductible Exp.					
Asset Additions					
Debt Reduction					
Loans to Shareholder					
A/P Profit Sharing					
Suspense					
Add:					
Loan Proceeds					
Depreciation/Amortization					
Prior Years Cash					
Current Cash Available					
Plus: Payroll Taxes Due					
Equals: Current Cash on Hand					
Summary:					
Checking					
Payroll					
Money Market Account					
Balance					

Dr. Boyd

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provided me that information at a glance.

The Summary Statement is simply a listing of the major categories of the Detailed Statement and is generally used to monitor your practice once expenses are under control.

Developing an Industry Standard

It is critical that we standardize how we evaluate our practices so that when we make comparisons, we are all measuring with the same yardstick. I would encourage each of you – whether new in the profession or established – to take the format provided here and copy it, modifying its subcategories for yourself or your study group, then have your accountant provide your numbers in this format. It is not essential that each of our Detailed Statements be identical in terms of all the subcategories, but I would like to see most orthodontists in this country adopt the same Summary Statement.

Do not allow yourself to be talked into using a generic or cumbersome format that is not easy to understand and meaningful to you as an orthodontist. Hopefully, after a few years of using the same format, we can compare practice statistics, employing a uniform system meaningful to us all.

Converting Your Statement

It is always easier to convert to a new statement at the beginning of the year. If you want to convert to this format now, I suggest running two systems for the remainder of the year. For internal consistency, it is vital that the person who posts the accounts payable understand how you want each charge to be categorized.

I recommend the use of a computerized checkbook (Quicken® by Intuit) to pay bills. Categorizations applicable to the same vendor never need to be repeated, balancing is fast, errors are reduced and the inevitable search for a particular check takes less than a minute. Because of such systems, many orthodontists do their own accounting, but for me the advice of my accountant is well worth the few dollars I would save by eliminating his monthly services.*

Using the Income and Expense Statement

Once you have built your statements, you can begin to analyze your costs against a number of standards: those of other dental groups, ratios developed by the *Journal of Clinical Orthodontics* in their biannual studies (although it may be unclear at times what expenses have been included in what categories) or figures from your study club or other orthodontic professionals with whom you share such data.

It is my contention, however, that the individual subcategories are not as important as having your total overhead fall within your guideline. Each doctor's philosophy about managing his or her

“Orthodontics was the only segment of the dental profession that suffered a practice profitability decline in 1995.”

practice will, to some extent, dictate how much is spent on certain categories. For example, my management style may reduce the need for an additional clinical staff member. A doctor who prefers to take a less “hands-on” approach may have higher staff expenses. Again, whether you focus on dentists or patients for referrals will dictate the ratio of expenses in these subcategories. Even the total overhead figure will change from time to time as your practice undergoes change. Last year, for example, I renovated my offices and bought new equipment. The year before, I “overbought” clinical supplies in December to avoid the impending price increase in January. Another time I had staff situations that required an increase in expenses. Each time my overhead changed. Each time I could track the changes and know exactly the cause because of Detailed Statement categories.

Cutting Expenses

Once you determine that you want to reduce your overhead, I would recommend setting a goal of dropping it by 3 to 5 percent per year until you reach your target. While I prefer not to generalize, there are three areas that usually afford the greatest potential for cost reduction: staff expense, lab costs and facility expense.

Staff Expense. In my opinion, most orthodontic practices are 10 to 20 percent overstaffed. While it is generally agreed that an 18 to 20 percent staff overhead is an acceptable range, I have found that 17 to 18 percent is workable. This figure includes all staff-associated expense, such as profit sharing and uniforms. Clerical staff expense has risen a whopping 2.6 percent in relation to other expense categories over the last ten years. I believe this increase is due in large part to the increased clerical time it takes to accept insurance assignment. Some practices now experience a 2:1 ratio in clerical-to-clinical staff costs. I believe this ratio should be about 1:1.

Controlling staff expense is the major challenge we face. Two effective ways of managing this cost are using part-time employees to reduce benefit expenses (which can also add maturity to your ranks) and paying staff on an hourly basis rather than through salaries.

Lab Costs. Judicious use of appliances can play an important part in controlling lab costs. We routinely use vacuum-formed “invisible” retainers the day of debanding and even replace lost Hawleys or positioners with this less expensive alternative. We buy rolls of the material (Cope Plastics, St. Louis, Missouri) and get it cut locally. For many patients, these retainers work well, saving the wait time for outside fabrication and an additional appointment. If storage is available, purchase plaster and stone in bulk and use high school students part-time to help lab technicians trim models and perform other tasks.

I have not found it advantageous to make positioners or Hawley and Herbst^{™**} appliances in my own lab. It may be cost-effective, but it is simply not something I want to do.

Facility Expense. Facility costs are determined, in large part, by strategic decisions. As we have encountered increasing competition from pedodontists and general dentists offering orthodontics, low-fee clinics and franchise operations, many of us have felt compelled to open additional offices. This practice has resulted in our incurring the highest facility costs in all of dentistry. Many orthodontists have consolidated into one office, but there are situations where satellites can be advantageous. I have expanded to three offices – a move that has contributed to improved top and bottom lines in spite of higher facility expenses. I concentrate on using staff effectively and I continually monitor facility expense to contain it as much as possible. My situation is just another example of why bottom-line focus is essential to proper individual expense determination and why subcategory expense “standards” may not always be appropriate for your practice.

Addressing Hidden Costs

The costs associated with the Income and Expense Statements are costs you can get your hands around. Once you’ve subdued that alligator, it’s time to clear the swamp – attacking the hidden costs that aren’t listed on the Income and Expense Statements. For example, if you’re combining today’s wire technology (that can continue to work for 10 to 12 weeks, particularly in the initial phase of treatment) with yesterday’s appointment schedule of 4 to 5 weeks, your cost per treatment is needlessly expensive. If you have not critically assessed the intervals between patient visits, unnecessary appointments can mire you in a pattern of habitual inefficiency. These and other advances in treatment modalities and office procedure offer us tremendous opportunity. Have you considered using the Herbst appliance, microetched bands for better retention or an electronic treatment card (e.g., Orthotrac’s) on your computer instead of paper charts? For me, these things have added up to outstanding patient care and the competitive

edge we need to stay ahead.

Success as Measured in Values

Competitively priced fee-for-service orthodontic care serves the patients we are privileged to treat better than any alternative system. This is not just about running a successful business. It is about running a well-managed practice so that you and your staff members can enjoy an outstanding quality of life. *No one can be a success in life and a failure at home.*

Success is about the transformation of sound information into practical reality. The old wisdom says that numbers don’t lie. I’ve found that they usually don’t. It’s these numbers that allow you to be objective in analyzing your practice. A little planning can go a long way toward ensuring that our practices will thrive – and not merely survive – in the ‘90s. In order to avoid management by crisis, it is important for us to separate the trivial from the critical. This *business* of orthodontics is just as important to our future as it is to produce excellent clinical results. I am confident we are up to the task.



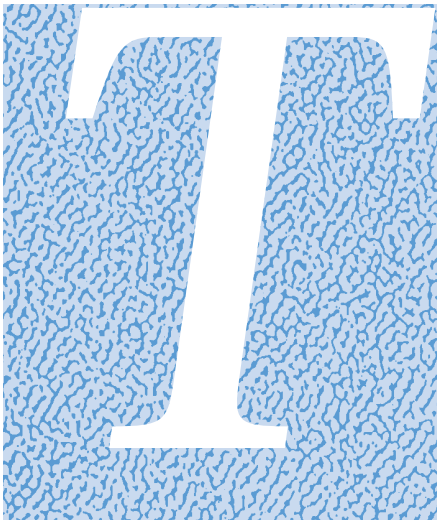
Never confuse profitability with greed. When I translate meeting my financial objectives into the enriched environment it provides for my family – the value I hold most dear – profitability is, indeed, respectable.

*Dr. Boyd’s accounting firm, Health Care Management Services, LLC, is based in Columbia, South Carolina. They are paid a monthly fee to provide a range of accounting and management services.

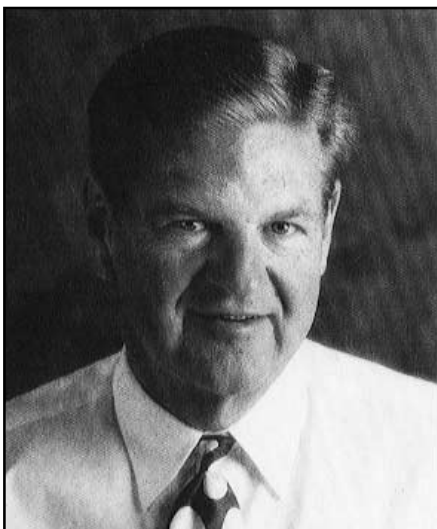
** Herbst is a registered trademark of Dentaaurum.

Functional Finishing

The concept, the tools, the techniques



by James J. Hilgers, D.D.S., M.S.
Mission Viejo, California



here is an old adage in orthodontics that just about says it all when it comes to finishing cases. It states simply, "If it were as easy to finish a case as it is to start one, orthodontics would not be a specialty." This tongue-in-cheek aphorism implies the expertise necessary to make our finishing systems match up to our goals in orthodontics – function, esthetics and stability. Idealizing a case tests all the skills of the orthodontist; diagnostic acumen, spatial acuity, feedback mechanisms, technical skills, perception of rebound and patient persuasion are required to put the finishing touches on a tough case. Every misplaced bracket position is magnified, the price paid for every diagnostic glitch, and adjustments made for every interfering cusp.

We are proposing a new model for idealization that is called *functional finishing*. Just as the name implies, this approach relies heavily on functional adaptation in the finishing stages rather than dominance mechanics. It is my contention that most cases finish a little easier when the patient's individual muscular pattern is harnessed, augmented and utilized to seat and detail the occlusion. The purpose of this article is not to concentrate so much on *how an ideal bite occludes* but to focus more on some of the *techniques one can use to get it there*. I must assume that you

Dr. James J. Hilgers, a well-known proponent of simplified orthodontic mechanotherapy, was instrumental in developing the recently introduced Bios™ System. He has published and lectured extensively and conducts a semiannual in-office seminar – "The Essence of Practical Orthodontics." Dr. Hilgers' private orthodontic practice is located in Mission Viejo, California. He received his dental education at Loyola of Chicago and graduated from the ortho program at Northwestern University.

know where "there" is. It would be arrogant to imply that I could give you all the answers to very complex problems in this article, but I certainly can give you some food for thought and point out some technical resources. Think, if you would, about the various factors impeding us when idealizing an occlusion – the very things that prevent us from being where we would like to be. A minimal overview of these would include:

Bracket Placement – There is a trend in orthodontics based upon the theory that if you place the perfect bracket in the perfect position on every tooth, finishing is a fait accompli. This is a contradiction in itself. Brackets do come off during treatment and are not always replaced perfectly, bracket bases do not always adapt perfectly to the anatomical contour of the crown, cement lines do occur, cuspal interferences do limit theoretically ideal bracket placement and cost factors do come into play. Add to this the fact that the best time to start most adolescent cases is when the permanent teeth are still in the eruptive process, and the goal of the perfect bracket and the perfect placement becomes an abstract dream, not a practical reality. In short, no matter how much we put into our appliance, even with indirect bonding, adjustments, however slight, will always be needed. *Of course, I agree that the closer we can come to achieving the ideal bracket and placement, the farther along the path to perfection we will be.* I am not trying to impugn this thinking, simply to state that other factors come into play. It is the basis of my belief in helping develop the Bios™ System. Brackets and placement *do matter*, but because perfect bracket placement is not always possible, adjustments and adaptation are necessary. Bracket quality and precise placement plainly help reduce the number of adjustments.

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1. To achieve an ideal or functional occlusion, each case must go through a phase known as the *ideal orthodontic occlusion*. When starting with a Class II malocclusion, the upper buccal segments should slightly override the lower buccal segments. The bite should be opened adequately so that incisal interference doesn't limit this movement. This implies a step-up in the ideal arch from the cuspids to the incisors.



2. When functionally finishing the overcorrected position of the teeth, a final seating into the ideal occlusion should occur. The upper incisors and lower incisors are engaged to occlude with the correct overbite and overjet relationship, and the buccal segments are seated downward to "lock in" the bite as rebound occurs.



3. In severe malocclusions (left), it is important to counteract the tendency for rebound in the supporting soft tissues and the TMJ when the teeth or bones are altered significantly (middle). This override in the buccal segments assists in mitigating this rebound (right).



4. The two divergent growth and functional patterns, brachyfacial and dolicofacial, require different finishing methodology. In dolicofacial patterns, the focus is on adding an adjunctive posterior vertical elastic that acts to keep the teeth in contact at all times. This enlists the inclined planes of the teeth as a positive force in the finishing process.

“...most cases finish a little easier when the patient's individual muscular pattern is harnessed, augmented and utilized to seat and detail the occlusion.”



5. Midline shifts (left) and vertical seating of the buccal segments are often resolved by sectioning the upper arch and using various seating elastics. In this case, a triangular elastic on the right, an anterior cross elastic and zigzag elastics on the left were used. This corrects the midline rapidly (right) and helps avoid some of the dissonance that can occur when using two continuous ideal arches.

Dr. Hilgers

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Adjustments take time; time costs money.

Need for Overcorrection – If we think we are going only from a malocclusion to an ideal occlusion, we are leaving out a very important factor: the transition between the two. I like to refer to this transition phase as the *ideal orthodontic occlusion* – the individual tooth positions the orthodontist must achieve if the occlusion is to be overcorrected, then settled. This ideal orthodontic occlusion is not the textbook perfection of Angle; it's what happens before we get there. In short, the farther we need to go in orthodontics, the greater the need to overcorrect in anticipation of rebound. While a Class I malocclusion with muscular balance does not need much overcorrection, the severe Class II, division 1 with gross muscular imbalance needs a great deal of overcorrection. Assuming we start out with a Class II deep bite, the overcorrected ideal orthodontic occlusion will show the incisors edge to edge, a step-up between the upper cuspids and incisors, and the upper buccal segments slightly overriding the lowers in a super Class I relationship. It is at this point that the functional finishing process starts.

Functional Considerations – We are all aware that we can finish the vertical growth patterns almost ideally, then watch them fall off the mark in a few short weeks. Conversely, when we can just get close in the strong muscular patterns, the occlusion seems to improve day-by-day. The stronger muscular patterns allow more leeway in the finishing process. Most often, the answer to treating vertical problems lies in conservative mechanics and adding posterior vertical elastics early in treatment as an adjunct to musculature. When strong musculature is absent, the inclined planes of the teeth do not work to help seat the occlusion.

Filling the Slot – Precise movement of teeth in a preadjusted appliance means filling the slots in order for torque, tip and angulation to be expressed. This implies rigidity in the archwires as bracket

tolerances are minimized to dominate tooth positions. This leaves very little leeway for functional adaptation and places a great onus on bracket position and appliance configuration. It makes more sense to have the preadjusted appliance overtorqued slightly, to fill the slot when it makes sense (e.g., Class II, division 2, extraction cases; adult cases) and to downsize the wire (increasing bracket tolerances) when not needed. The peripheral advantage of not filling the slot in all cases generally means lighter wires, more functional adaptation and more “play” within the system. *Filling the bracket slot does not necessarily mean more control in seating the occlusion, just more control in each separate arch.*

Tooth Size and Shape Discrepancies – The smallest tooth size discrepancies can greatly effect our ability to seat an occlusion. Small upper lateral incisors come to mind because they are so obvious, but small tips, rotations, angulations and malposed contact points can subtly change the entire footprint of the arch. This is why it does not make too much sense to resolve small Bolton discrepancies at the outset of treatment. It's much easier to analyze and correct these in the finishing process once these orthodontically induced disharmonies have been expressed at the later stages of treatment.

Unilateral and Midline Problems – Quite often the most difficult problems to resolve in the final detailing of the occlusion come from discrepancies of uncertain origin. Seeking additional rigidity in the system can further aggravate the problems, because a “locking” of the occlusion can occur, preventing simple correction of the problem.

The Concept

Orthodontists have been taught, on the whole, that control is the answer to idealizing an occlusion. This implies precise torque control, perfect arch coordination and continuous arch mechanics. It is a

holdover from earlier times in orthodontics when state of the art was banding, control meant completely filling every slot and torque meant you torqued the wire. I remember finishing cases in this mode and recall the importance of wire-bending skills. I am not suggesting that this skill is unimportant, merely that it is a bit incongruous in this day due to changes in technology. *I find that accentuating the settling process as an aid in functional adaptation is just as important.* It is ideally what the positioner is meant to do. Whether using a positioner or not, most would agree that it is important to obtain the best result possible with your appliances before relying on the positioner. That is what this article is about. The approach involves, to a certain extent, *giving up control* of the case in the final stages of treatment. Stated more accurately, it means giving control back to the patient's own functional (muscular) pattern and not trying to overpower the occlusion at this critical juncture in treatment. We want to keep what we've accomplished orthodontically while allowing a more natural settling process to occur. Functional finishing is based on several principles:

Begin with Torque Control, Finish Without it – The concept of torque control throughout treatment proposes that in most cases it is beneficial to have a torque control wire (square, rectangular) engaged in the bracket slots at the very outset of treatment. Highly elastic edge-wise wires have had an immense impact on our ability to fill the slot in even the most crowded of cases. I am constantly amazed at the deflection that a cooled rectangular Copper Ni-Ti™ can achieve as the initial archwire. Round wires do have a distinct advantage in finishing, however. They can serve to allow the teeth to settle vertically (losing torque control) while maintaining arch form and first order adjustments. This is contrary to the way many of us think. Traditional orthodontic doctrine dictates beginning with round wires and finishing with edgewise wires.

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6. In this case, the upper buccal segments are being seated vertically using a stabilizing lower ideal arch (.016 x .022 TMA) and a light, bendable round upper wire (Australian .014). This allows for first order bends in the upper arch and at the same time lets the buccal segments roll inward slightly, reducing lingual cusp interferences. Note the patient is wearing short triangular elastics (doubled elastic) to aid in this process.



7. When torque control is still needed in the upper arch, a continuous yet flexible archwire (.016 x .022 Turbo Ni-Ti™, .016 x .022 Force 9®) is used. The short triangular elastics force the upper arch to flex in the seating process. These highly flexible archwires are not used when detailing bends are required, as they are not bendable.



8. In this Class II malocclusion (left), the upper buccal segments are overcorrected using Class II vertical elastics. The occlusion is then settled vertically by using a flexion arch on the upper and a stabilizing arch on the lower with short triangle elastics (middle). The lower rigid ideal arch maintains lower arch integrity while the vertical elastics allow the upper buccal segments to engage in the final occlusion (right).



9. Small first-order bends (detailing bends) are made in a .016 x .022 Titanium Niobium/FA archwire using a narrow optical plier. This wire affords the timesaving advantage of intraoral arch bending without deformation of arch form. This wire is excellent for perfecting inter-tooth relationships once arch form has been successfully established.



10. Precise 1mm bends can be made in the Titanium Niobium/FA archwire using Ormco's Intraoral Arch Bending Plier/Universal (803-0324). The plier is closed completely so that symmetry in arch form is maintained.



11. Detailing lower arch using a .016 x .022 Titanium Niobium/FA archwire. All the bends were introduced intraorally.

Dr. Hilgers

continued from preceding page

Functional finishing would propose just the opposite in many cases. *That is, begin with edgewise, finish with round.* A good example of this phenomenon would be downward rolling of the upper buccal segments following expansion of the upper arch. This can be accomplished much more easily with a round wire (giving up torque control) than an edgewise arch (depending upon torque control).

Working a Flexible Arch Against a Rigid Arch

– It is very beneficial to maintain strict torque control in one arch (usually the lower) and free the opposite arch (usually the upper) somewhat to seat against it. This concept implies an ideal or torque-control type of wire in the stabilized arch and a flexion or yielding wire in the opposing (or moving) arch. The lower arch is typically the stabilizing arch because it is the anchorage unit and lower incisor inclination is so critical in most cases.

Simplifying First and Second Order Bends

– The final detailing of an arch is defined by many subtle bends in the archwire. Using new wire technology, this can be accomplished with minute intraoral bends that do not require constant removal of the wire to make them. In the past, intraoral bending of the archwire, although utilized, had the negative side effect of arch form change. Final detailing requires a wire that is very malleable.

Retaining in a Way that Allows the Adaptive Process to Continue

– The retention process should be one that allows for further settling of the occlusion. Again, the focus is away from rigidity and toward a functional process that allows the patient's musculature to become progressively more dominant in forming the final occlusion.

The Tools

Titanium Niobium/FA – A breakthrough in wire technology has led to the development of Titanium Niobium/FA™ archwire. It is a sister wire to TMA®, yet possesses a

malleability that lends itself to easy placement of first and second order bends. The wire, even in its larger sizes, allows occlusal function to express itself while maintaining torque control and arch-form integrity. We see distinct advantages to this archwire in the finishing process.

1. Although Titanium Niobium/FA is not intended to be an anchorage arch for Class II elastics, it is very effective in yielding to the occlusion when vertical elastics are used.
2. Torque control from tooth to tooth is maintained while detailing is

accomplished.

3. Small first- and second-order bends can be made without changing arch form or removing the archwire for adjustment.

Intraoral Adjustments – A thin optical plier or intraoral arch-bending plier is used to make small adjustments in the archwire. The teeth affected are untied from the arch and the wire-bending plier placed vertical to the horizontal plane of the wire (to prevent introducing unwanted torque in the wire). When a precise bend is made in the wire, the plier should be closed all the way to minimize any arch form change. In this

continued on page 13



12. Occlusal view of beginning lower arch (left) and after detailing with intraorally placed bends in a .016 x .022 Titanium Niobium/FA archwire (right). This archwire maintains lower arch integrity when using vertical seating elastics. It should not be used, however, with horizontally biased elastics due to its pliant characteristics.



13. Class II vertical elastics are used in functional finishing to keep the posterior segments in contact at rest position. They serve as supplementary muscles. The placement of the hemi-hooks on the brackets dictates the overall working angulation of the elastics. It is ideal to have both the long and short portions of the elastic running in the Class II direction. Class II vertical elastics are not started until the buccal segment teeth are on the downhill incline in the Class I direction.



14. Short triangle elastics are laced from the distal of the lower 1st bicuspids, over the mesial of the cuspids and down to the mesial of the lower cuspids. These elastics are especially beneficial in seating a flexion upper arch against a rigid lower arch. It also helps seat the entire upper arch without using anterior box elastics, which can give rise to root resorption.

Dr. Hilgers

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way, it is possible to make adjustments in the arch that are appropriate in size for the movement needed. Titanium Niobium/FA most often serves as the torque control, stabilizing wire in the lower arch, where small first-order bends are commonly needed in the incisor region.

Flexion Wires – Flexion wires are light round or rectangular archwires that yield both to the forces of occlusion and the overriding pressure of vertical seating elastics. If passive torque control is still needed in the upper arch, common flexion wires of choice would be Force 9® or

Turbo Ni-Ti™. When arch form only needs to be maintained (i.e., no arch bending or torque control required), the wire of choice would be a .016 round Orthos™ Ni-Ti. If torque control is not required and some arch bending is needed, an .014 or .016 Australian wire can be used. The main characteristic required of this wire is that it be flexible enough to allow a seating of the occlusion without loss in arch form or tooth alignment. It allows a seating of the cusps when used in conjunction with vertical seating elastics and compensates for the overcorrection during the settling process.

The Techniques

Overcorrection – A good example of this involves the wearing of Class II elastics. If we retain cases coming directly out of Class II elastics wear, we don't have time to accommodate for rebound. We haven't found centric relation (due to muscle splinting), aren't sure what periodontal rebound will do and haven't allowed for the bone adaptation process. This all takes time. It is advisable to stop all horizontal elastics (Class II or Class III) at least three months prior to appliance removal. This

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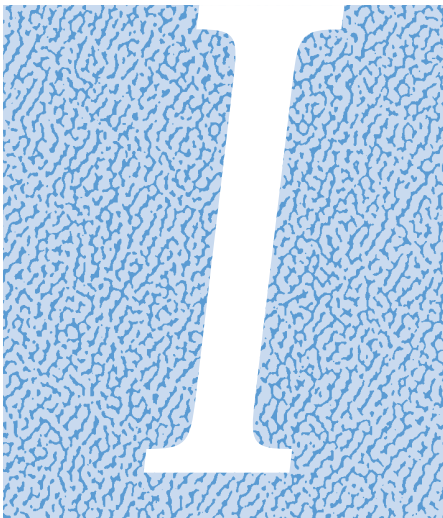
15. When cuspids are not engaged in an anterior wire (left), they move lingually, breaking the mesial proximal contacts (center). This can be counteracted by including the cuspids in the anterior sectional wire, which maintains the in-out relationship between the upper cuspids and the upper lateral incisors (right). The last extension of the zigzag elastics is then carried to the mesial of the upper cuspids to help seat them.



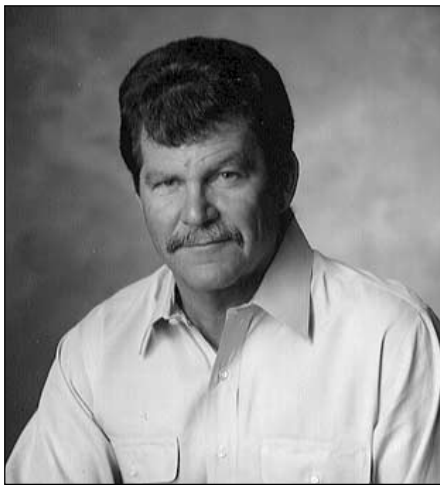
16. Box elastics used in conjunction with triangular elastics reseat the incisor segments and reestablish proper coupling in this area.

“The farther we need to go in orthodontics, the greater the need to overcorrect in anticipation of rebound.”

The Cantilever Bite-Jumper the Possibilities



by Joe H. Mayes, D.D.S., M.S.D.
Lubbock, Texas



A native of Crane, Texas, Dr. Joe H. Mayes received his B.S. from Texas Tech University, followed by his D.D.S., M.S.D. and Certificate in Orthodontics from Baylor College of Dentistry. Dr. Mayes is engaged in the private practice of orthodontics in Lubbock, Texas, and has been actively involved in new product development.

In this article, I will discuss various options and choices of adjunctive treatment that can be incorporated within the Cantilever Bite-Jumper™ System. When the lower jaw of the typical Class II patient is slid forward to a super Class I position, the upper jaw is usually found to be too narrow and needs to be expanded. Also, the lower jaw may or may not need to be expanded. If the appliance has been purchased with Precision Lingual Hinge Caps™ already welded to the lingual of the upper and lower crowns, appliances can be fabricated to expand both upper and lower jaws. I usually have the Hinge Caps welded at the time of purchase, due to the frequent need for palatal expansion and for either expansion or use with a removable lingual bar for the lower jaw. This also allows us to expand with the Cantilever Bite-Jumper (CBJ) in place instead of having to delay its implementation until the completion of expansion.

We make our expanders in-house because we have an excellent lab. Fabrication of upper expanders is a very delicate operation. Each office can evaluate whether to do the lab work or to send it to a commercial lab. I have worked with AOA Lab on my designs and can recommend them to those not wishing to do the work in-house.

There are several ways to expand the upper arch, so choose the one you feel most comfortable using:

1. Rapid palatal expander
2. Quad helix
3. Goshgarian arch (with or without extensions)
4. Horseshoe or U-shaped arch
5. W-arch

I will describe the fabrication of each of these appliances. Due to tolerances in machining, the Precision Lingual Hinge

Caps .032 x .032 slot will accept .032 x .032 Snug Fit stainless steel wire. Snug Fit wire allows less play than regular .032 x .032 wire but can be placed or removed easily, so I suggest that you make the appliances from Snug Fit stock and utilize regular .032 x .032 wire to hold the expansion. For instance, after the RPE is removed, a transpalatal bar could replace it to hold the expansion (Figure 1).

The RPE is fabricated after the stainless steel crowns have been fitted and the upper impression made and poured in quick-set lab plaster. The .032 x .032 Snug Fit arms are bent as shown in Figure 2. The vertical bend at the distal acts as a stop to prevent mesial movement of the arms in the slot. The bayonet bend on the mesial of the bracket prevents distal

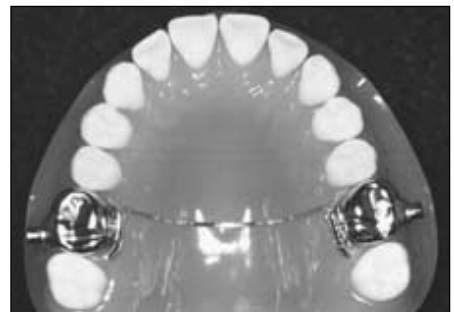


Figure 1. Transpalatal Bar – .032 x .032 or .032 round stainless steel.

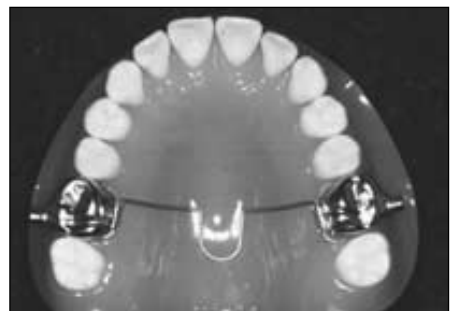


Figure 4. Goshgarian – .032 TMA round.

System – Exploring

movement of the arm. The arm is bent to touch both teeth (D/4 and E/5) mesial to the molars. The arms are bent to conform to the tooth-palate junction. Gravity pulls the arms down so there is no play or loss of torque when expansion is started.

The expander is adjusted to approximate these arms as closely as possible. Carefully solder the arms to the four legs of the expansion screw. Do not heat the Hinge Caps, as it will ruin them. Polish the appliance and cement it to place with the crowns and screws in the arches. At this stage the tubes are not attached but will be placed once the expansion is achieved. Bond a button or place bonding material to prevent the appliance from riding up. At the next visit remove the expander and place a transpalatal bar as well as the rods

and tubes. Be sure to use Ceka Bond® on the screw threads.

A quad helix appliance is fabricated as any other but can be made of .032, .032 x .032 or .032 x .032 Snug Fit stock (Figure 3). Do not overactivate any of these appliances, as they are made of stiffer wire than what is normally used. A Goshgarian-type wire may be used for expansion or rotation of the molars. We usually make this type appliance with .032 round TMA® to allow more flexibility and to generate less force (Figure 4). The horseshoe or U-shaped arch is made from .032 x .032 Snug Fit wire and is primarily used for molar expansion only, but it can expand the buccal segments if placed against them (Figure 5). The W-arch is probably the second most popular expander in my

office and, once again, is made from .032 x .032 Snug Fit wire (Figure 6). Do not overactivate this appliance either.

If any of these appliances are used on mixed dentition, a button or stop of bonding material should be placed occlusally on the lingual of the D/4. This prevents the appliance from “riding up” occlusally and losing its effectiveness. This procedure should also be followed on lower expansion appliances.

The upper crowns may be purchased with buccal tubes attached for archwires. I recommend the Peerless® tube which is small and comes with a ball hook. I routinely use brackets when I’m using the CBJ with a Class II, Division 2, or an adult case. Go ahead and move the lower jaw edge-to-edge, advance the four upper anteriors to a normal position and use shims to advance the mandible as needed. Adult cases will correct with mostly dental movement of the upper molars, and the distalization can be maintained with a Nance (Figure 7).

The appliances I use for lower expansion are the lingual bar, Frozat and labial expander. The lingual bar can be used
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Figure 2. RPE – .032 x .032 Snug Fit stainless steel.



Figure 3. Quad Helix of .032 round stainless steel.

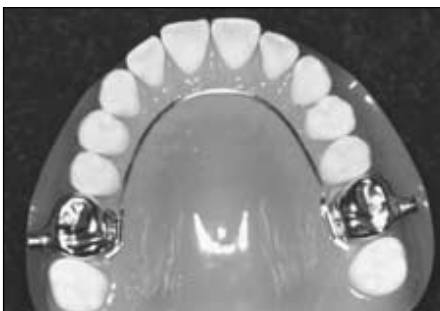


Figure 5. Horseshoe or “U” – .032 x .032 Snug Fit stainless steel.

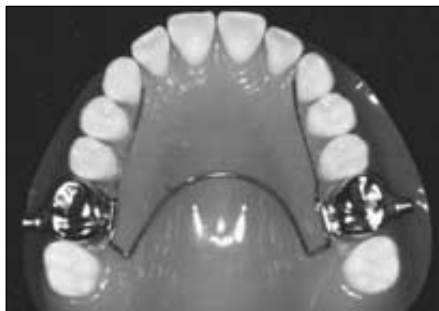


Figure 6. “W” – .032 x .032 Snug Fit stainless steel or .032 x .032 TMA.



Figure 7. Nance – .032 x .032 Snug Fit stainless steel.

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to expand and upright the buccal segments (Figure 8). Since we use .032 x .032 Snug Fit wire, we can control the torque of the lower molars (Figure 9). Also, if you want to expand the 2nd molars and/or control their eruption, extend the distal wire from the distal bayonet bend and allow the wire to touch the lingual of the second molar and then form an occlusal rest.

The "Frozat" is a fixed Crozat framework.

We make the appliance from .032 x .032 Snug Fit stock, and it can be mostly premade from the record model or as a second pour of the lower record model's impression (Figure 10). Do not overactivate – the appliance can be removed and activated again, if needed. Once the desired expansion is achieved, a .032 x .032 Snug Fit lingual bar is placed to hold the expansion for the duration of the CBJ wear. This is my appliance of choice for expanding the lower.

A labial expander can be used if some lip bumper effect is desired (Figure 11). Small pieces of .045 lumen steel tubing (4.5 mm long) are soldered to the bottom of the cantilever arm. Two pieces of .045 stainless steel wire are bent as shown. Stops are soldered at the insertion into the .045 tubes. A longer piece of .045 tubing (8-10 mm) is soldered to one of the wires. Open coil Ni-Ti® wire with a lumen of .045 is placed to expand against the tube and a stop. Lingual sweep



Figure 8. Lingual Bar Soldered – .045 stainless steel.

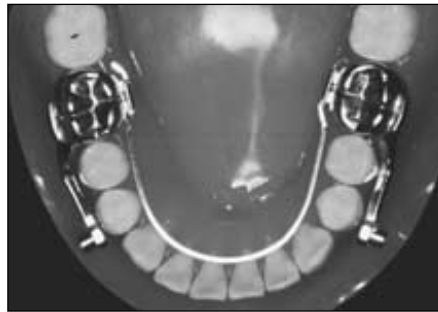


Figure 9. Lingual Bar Removable – .032 x .032 Snug Fit stainless steel.



Figure 10. "Frozat" – .032 x .032 Snug Fit stainless steel.

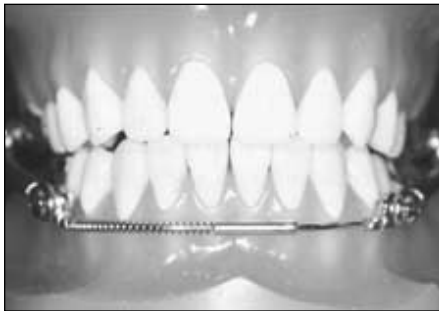


Figure 11. Labial Expander – .045 stainless steel.



Figure 12. Lower Sweep Arms – .032 x .032 Snug Fit stainless steel.



Figure 13. Deimpactor for 2nd Bicuspid – .032 x .032 TMA. Note, always use labial stabilization.



Figure 14. Uprighting Springs – .017 x .025 TMA (.018 x .025 Peerless tubes).



Figure 15. Occlusal rest bent.



Figure 16. Occlusal rest bent and soldered. Lower incisors bonded with -10° torque Orthos™ brackets. Note bonding of occlusal on lower fours.

arms of .032 x .032 Snug Fit are bent with bayonet bends to expand the teeth as the open coil moves the cantilever arms apart (Figure 12). Once the desired expansion has been achieved, there are three ways to maintain it. The tube of the labial wire may be crimped and locked down on the opposing .045 wire, or a new labial wire or lip bumper with stops can be used. However, I normally remove the complete labial appliance and replace the sweep arms with a .032 x .032 Snug Fit lingual bar.

This appliance can be used for numerous other purposes. A short segment of .032 x .032 TMA can be used as a deimpactor for a second bicuspid or second molar (Figure 13). A molar uprighting spring may be used to upright the upper molar or to allow it to move bodily to the distal (Figure 14). The uprighting spring is .017 x .025 TMA and requires the use of a Peerless® tube on the upper molar. Your imagination is your only limitation.

Additionally, the basic appliance lends itself to application similar to Dr. Terry Dischinger's edgewise Herbst technique. Simply take a piece of .036 wire and bend as shown in Figure 15. Solder this rest to the occlusal of the cantilever arm and bond the lower anterior teeth with -10° torque Orthos™ brackets (now available from Ormco – Figure 16). The cantilever arm is manufactured with a .022 x .028 tube attached to the occlusal surface of the cantilever arm. Use .019 x .025 35° Copper Ni-Ti™ as a labial arch to unravel crowding of the lower anteriors and to stabilize the mandibular portion of the CBJ. Even if you don't use this technique, the tubes may be useful. If any tipping of the cantilever arms occurs, lower braces may be placed to correct the downward and forward tipping.

As all these appliances require impressions and pouring of models, a microetcher will be needed to help clean the inside of the

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The CBJ™ Kit – Now Available for Immediate Delivery



The 20-patient CBJ Kit provides the essential components for the single-appointment Cantilever Bite-Jumper™. A complete size range of laser-marked, microetched first molar crowns (seven per quadrant) is provided – 80 crowns distributed according to popular usage. Upper crowns are supplied with nickel-brazed axles, while lower crowns come with nickel-brazed cantilever arms designed for strength and patient comfort. Each cantilever arm has an axle with an .022 tube occlusal to it for use with bonded cases. All necessary components for 20 cases are also supplied, including rods, sleeves, Hex-Head screws, and a Hex-Head Allen wrench. The CBJ saves the expense of additional chair time, doctor time and staff time, and costs significantly less than using a commercial lab.

The CBJ Fit-Kit™ provides one loose crown in each of the 28 sizes for trial fitting in order to avoid having to trial fit (and possibly deform) the more expensive crowns with attachments. Prewelded Precision™ Lingual Hinge Caps are an option that eliminates all soldering and lab work except for pouring models. If Hinge Caps are used, Snug Fit .032 x .032 wire (available in straight lengths or preformed lingual arches) is recommended for achieving an ideal fit with lingual or transpalatal arches. Peerless® M/P .022 buccal tubes are also available nickel-brazed to upper molar crowns for use in bonded cases.

Crowns with attachments and Allen wrenches can be reordered separately (no minimum). Loose crowns (any mix of sizes) and other components can be reordered in packs of ten. For order information, see Page D of the Center Section.



Orthodontic Practice Valuat

by Jerry R. Clark, D.D.S., M.S.
Greensboro, North Carolina

\$500,000. \$600,000. \$700,000. \$800,000. A lot of money! Yes it is, but many orthodontic practices are worth these amounts and some, even more. However, many doctors will receive only a fraction of this amount, or worse yet, they do nothing when it comes time to sell their most important and valuable asset. Why? Improper planning and the failure to take the necessary steps to realize the cash value of their many years of hard work. In the United States there are more than 4,000 practicing orthodontists over the age of 48, yet fewer than 220 orthodontic residents are graduating yearly and entering private practice. These residents are looking for attractive, profitable practices to purchase. Will yours be one of them?

What price will a potential buyer be willing to invest in your practice? The rules of thumb – “one year’s gross” or “two years’ net” – are much too simplistic to use in arriving at a fair value. Recently, a practice in the western part of the country that was grossing over \$800,000 a year was valued at only \$220,000, while a practice in the Southeast that was grossing \$500,000 was valued at over \$520,000. Rules of thumb are only approxi-



Dr. Jerry R. Clark has been certified by the American Board of Orthodontics and practices in Greensboro, N.C. He is also CEO of Orthodontic Management Group, Inc., a consulting firm specializing in orthodontic practice management, valuation and practice sales [(800) 621-4664].

mations. Banks handling the financing will require more sophisticated and appropriate valuation techniques. Buyers will demand documentation from an outside source as to the value of a practice. What is the best way to have your practice valued?

We posed several important questions regarding valuation to a panel of eight leading practice-valuation specialists that included CPAs who specialize in the valuation of professional practices from each of the “Big Six” accounting firms. Other recognized experts in the field of professional practice valuation were also questioned in specific areas. The panel consisted of the following:

Mark Edwards

Arthur Anderson – Manager, Valuation Services Group

Mark Zyla

Coopers & Lybrand – Manager, Valuation Group

David Schunk

Deloitte & Touche – Manager, Valuation Group

Kathleen O’Connell

Ernst & Young – Partner, Healthcare Consulting Division

Mitchell Friedman

KPMG Peat Marwick – Specialist, Valuation and Due Diligence

Richard Joyner

Price Waterhouse – Director, Personal Financial Services (personally involved in the valuation of over 50 orthodontic practices)

Bill Sutton

Orthodontic Management Group (OMG) – President

Dr. Larry Domer

University of Colorado Dental School – Associate Dean of Administration

Would you ever advise a client to sell a professional orthodontic practice without first obtaining a valuation performed by a professional familiar with that particular field or profession?

Obtaining a properly performed valuation *first* is the key to maximizing the doctor’s return on their investment of time and effort in the practice. Mitch Friedman (KPMG Peat Marwick) said, “It’s like detailing a car when you are getting ready to sell. You want to make the car look as good as possible. Clean it up, wash it, make it shine.” You want to do the same with your practice, and a properly performed valuation should give the doctor information to make his or her practice *shine*.

According to Richard Joyner (Price Waterhouse), “This is becoming a very specialized field. Entire divisions of major accounting firms are now dedicated to preparing valuations for professional practices. Companies like Blair-McGill, Orthodontic Management Group (OMG) and Sarantos & Company, all specialize in limited areas within the dental/healthcare field. The doctor, when seeking a valuation, should ask questions and determine the level of expertise of the individual or group performing the valuation. There are people available who are highly skilled and experienced in the specialized field of orthodontic practice valuation. Don’t be afraid to ask the valuator how many orthodontic practices they have visited and valued. Be sure to ask for a list of references of previous clients. Don’t settle for someone who has limited experience when there are qualified professionals who are familiar with the specialty of orthodontics.”

on – What's the Best Way?

Bill Sutton (OMG, a consulting firm specializing in orthodontic practice management, valuation and practice sales) stated, "When you can show doctors how to make their practices more valuable and more salable, they begin to listen. Orthodontists are starting to realize the importance and benefits of a properly performed valuation. Recently we worked with a doctor, valued the practice and not only found a buyer but also showed the selling doctor how to increase the value and selling price of the practice by over \$180,000. This can be accomplished if the selling doctor plans well ahead and has the valuation performed as part of a planning process."

Would you ever consider providing a valuation of a professional orthodontic practice for sale, without performing due diligence (an on-site visit to confirm the numbers and analyze the assets, business processes, organization and management, in order to determine fair market value)?

Mark Zyla (Coopers and Lybrand) said, "It is a must to understand the quality of the numbers behind the valuation statement." This can only be accomplished by an on-site visit. Many questions must be asked not only of the doctor but also of the staff.

Dr. Larry Domer (U. of Colorado), an expert in dental practice valuation, states, "To do a valuation, the valuator must ask a lot of questions. That person should then package that information in a nice, presentable format. The valuation report should minimize questions and requests for additional information by the buyer. A valuation goes beyond just having to go back and collect more information for the buyer. That exchange can create a rift between buyer and seller."

Roger Hill, president of Business and Professional Association, in an article on valuation in the August 15, 1994, *ADA News*, "Dental Practice Valuation Calms Emotional Tides," states that the doctor should expect the person performing the valuation to:

- Gather a significant amount of financial information about the practice.
- Make adjustments, as necessary, to the historical financial statements.
- Make a site visit to interview the doctor-owner.
- Apply well-recognized valuation methods.
- Write an understandable report for the client.

Dr. Domer (U. of Colorado) said he has seen valuation reports varying from a page or two to a 50-page (or more) document which includes patient and financial details and a complete

explanation of how the valuator determined the practice value. The valuation can also be used as a marketing tool. According to Dr. Domer, "It can provide prospective buyers with all of the information relating to the physical facility, the patient base, production, collection procedures and staff."

"Our average valuation report is approximately 70 pages in length," stated Bill Sutton (OMG), "and includes valuable information which will not only allow the doctor to document the value of the practice for a potential buyer but also provides strategies to make the practice more profitable and facilitate the transaction. Our report can be used by any practicing orthodontist who desires to improve their practice and increase their income." Hill, Domer, Sutton, and Charles Willhoite, senior associate with Willamette Management Associated, Inc., all agreed that, for a complete and thorough valuation, the doctor should expect to pay anywhere from \$2,500 to \$6,000 or more, depending on the size of the practice and the complexity of the issues. The cost can jump to \$10,000 or more in cases of divorce where testimony and time are involved. "A properly performed valuation can be the best investment a doctor will ever make," said Friedman.

Would you ever recommend that a potential buyer even consider making a practice purchase without first obtaining a valuation performed by experts experienced in the field of valuing professional orthodontic practices?



"We have seen more problems arise when the proper steps in the practice sale process are not followed," stated Joyner. "This is a highly emotional transaction and the doctors involved must realize that a handshake or trusting each other to be fair when hundreds of thousands of dollars are involved is an unrealistic expectation. Once the potential buyer becomes a part of the practice, it becomes much more difficult to ascertain and negotiate a fair selling price. The selling doctor always feels he or she is not getting paid enough for years of hard work and the buying doctor always feels he or she is paying too much. Heated discussions ensue and the entire deal falls apart. Everyone loses!"

The buying doctor must be savvy enough to insist on a proper valuation being performed long before even considering entering
continued on following page

Dr. Clark

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the practice. If the selling doctor is unwilling to pay for an independently performed valuation, then the buying doctor would be well advised to make the necessary investment in a valuation to verify an appropriate value for the practice, be willing to split the cost of the valuation with the selling doctor or have the courage to walk away from a potential disaster. If the selling doctor is not willing to invest a little money (and \$5,000 is not much when you are talking about a practice worth over \$500,000) to determine a fair selling price, how *fair* do you think he or she might be with the rest of the negotiations?

Randal Berning, an attorney and consultant, was quoted in the *ADA News* article, "A valuation should help the two parties avoid a complete breakdown in communication that can and does occur. Obtaining a valuation at the outset should help eliminate a lot of the emotionalism."

Would you ever recommend that the doctor's CPA or accountant be the one to determine the value of the practice to be sold?

"Absolutely not," exclaimed Chip Evans, a managing partner with KPMG Peat Marwick. "There is an inherent conflict of interest present here. If the doctor is properly represented, the accountant is motivated to get 'top dollar' for the practice. Independent consultation is necessary."

"Have someone objective, from outside the practice, who has experience in that particular profession do the valuation," stressed Zyla. He said, "A qualified outsider can help you separate the business decisions from the emotional considerations in this important transaction."

Sutton echoed, "This is a problem we encounter all too often. We are called in after the fact to revalue a practice when the relationship is on the verge of breaking up because the valuation was improperly performed in the first place. The parties involved just want to know that the value placed on the practice is fair. Having an experienced independent source providing the valuation does wonders in calming troubled waters."



Kathleen O'Connell (Ernst & Young) summarized it this way, "The doctor's accountant should never be the one to perform a valuation for the sale of their client's practice because of a lack of objectivity and experience as well as an inherent conflict of interest. Unless the doctor's accountant is in the business of valuing orthodontic practices, they can't possibly have enough experience to provide an appropriate valuation. And even if they were, there still would exist a conflict of interest and a lack of objectivity."

When would you start the planning process for the transition of a professional practice?

Today, much more than in the past, orthodontists are aware of the importance of a credible valuation, but the question seems to remain: When should the valuation be performed? Zyla suggests to "start as early as possible, do research, read articles on valuation and transition and prepare for the future." He recommends that the valuation be done well in advance so the doctor can "do the necessary things to present the practice in the best possible light."

The entire panel of experts agreed that it is never too early to start planning for the future. "In fact, a properly performed valuation provides the doctor with a business plan for the future," stated Sutton. He said, "It not only prepares the doctor for the future sale of the practice, but a well done valuation also provides helpful information to make the practice more successful and profitable *NOW!*"

Orthodontic practices are different from dental practices. A dental practice can be sold, because all the patients are currently in treatment or on recall with the hygienist. An orthodontic practice is totally different, since much of the value of the practice involves the goodwill of former patients and the orthodontist's reputation in the community. A transition time of less than two to three years may reduce that goodwill factor, since the community has insufficient time to become familiar with the names of the two doctors (buyer and seller) as one entity.

In fact, the experts all agreed that the optimum time for transition is always before the practice reaches its peak. The normal life cycle of an orthodontic practice can be placed on a bell curve. The practice builds, levels off and eventually begins to descend on the right side of the curve. But the informed, forward-thinking practitioner can avoid this probable eventuality by constantly building the practice and not letting it slide at a time when they think they are ready to slow down and/or retire.

Joyner stated, "No business wants to do worse next year than this year. Constantly building the practice is just good business. Dentistry is the only profession I know where the doctor makes a conscious decision to go out of business. This logic escapes me. It has no basis in solid business principles and makes no sense. Why would you build a valuable asset only to watch it disintegrate?"

A smart strategy would be to build an orthodontic practice to a peak, then sell a portion and keep on working with the new partner while continuing to build. Then when you are finally ready to slow down, bring in a third orthodontist, sell your remaining ownership in the practice and continue to practice

until you choose to retire. But, all the time, all parties involved should be working to continually build the practice. You *never* want to be less profitable than you were the previous year!

“A properly performed valuation will help the doctor in making these strategic decisions for the future. Unfortunately for many, they are already sliding down the right side of the bell curve and at that point will find it much more difficult or impossible to sell their practices,” stated Sutton.

In the *ADA News* article, Dr. James Branson (Director, ADA Council on Dental Practice) suggests doctors have their practice valued and bring in a buyer “long before the stage where they begin to slow down their practice and move out.” By then, typically, the practice has gone down in value. “If dentists sell at the practice’s peak,” observes Dr. Branson, “just think of all the wonderful practice opportunities we could be creating for our young practitioners out there. Mature practices are the kinds of practices young dentists want to come into. And there are a whole lot of practitioners who are at that period in their career when they should be looking at bringing someone else into the practice.”

What valuation method(s) would you recommend for determining the value of a professional orthodontic practice for sale or transition?



Mark Edwards (Arthur Anderson) stated, “Doctors should beware of rules of thumb. Revenue multiples are not applicable or reliable when valuing a professional practice. Cash is king! A discounted cash flow analysis based on a three- to five-year period gives a much more reliable picture of the true value of a professional practice.”

Zyla agreed and said, “The discounted cash flow analysis should be utilized and supported by the capitalization of earnings ratio approach.” None of the other approaches to valuation work well for professional practices. They are either too simplistic or inappropriate in the orthodontic field.

Domer and all the experts agreed that only valuation methods that focus on the practice’s future earnings are appropriate. “The key to all of these,” he says, “is that the value will be determined by the ability of the practice to generate earnings. This is in the interests of both parties – buyer and seller. The buyer must create enough income for living expenses and to service the debt incurred in purchasing the practice. If the buyer can’t pay, the seller doesn’t get paid. It’s as simple as that.”

The ADA Dental Practice Library publication, *Successful Valuation*

of a Dental Practice, states, “There are three primary earnings methods: the capital earnings approach, the excess earnings approach and the discounted future earnings approach. Even though these approaches vary, they all take into account the expected level of future income and the degree of certainty that the level of income will be maintained.”

Sutton summarized the valuation process this way, “Take the time to plan ahead, far ahead, for the future of your practice. A properly performed valuation is invaluable in making your practice more productive and profitable. My recommendation to all orthodontists is:



1. Have a practice valuation performed well in advance of the anticipated transition.
2. Implement the changes recommended in the valuation report; i.e., fix up or *detail* the practice.
3. Revalue the practice and present it for sale or transition.

“Sometimes this can mean the difference of thousands of dollars to the selling doctor. Many orthodontic practices are transitioned 10 to 15 years before the senior doctor decides to retire. Selling all or part of a practice doesn’t mean the seller is required to retire, unless they want to and the buyer agrees.”

A practice valuation will provide you with a strategic plan for the future of your practice. It is the *first* step toward the future, not the *final* step.

The experts agree – the panel responds unanimously to key valuation questions. Edwards, Zyla, Schunk, O’Connell, Friedman, Joyner, Sutton and Domer concur:

1. Would you ever advise a client to sell a professional orthodontic practice without first obtaining a valuation performed by a professional familiar with that particular field or profession? **NO**
2. Would you ever consider providing a valuation of a professional orthodontic practice for sale, without performing due diligence (an on-site visit to confirm the numbers and analyze the assets, business processes, organization and management, in order to determine fair market value)? **NO**
3. Would you ever recommend that a potential buyer even consider making a practice purchase without first obtaining a valuation performed by experts experienced in the field of valuing professional orthodontic practices? **NO**
4. Would you ever recommend that the doctor’s CPA or accountant be the one to determine the value of the practice to be sold? **NO**
5. When would you start the planning process for the transition of a professional practice? **NOW**
6. What valuation method(s) would you recommend for determining the value of a professional orthodontic practice for sale or transition? (A) One times gross, (B) Two times net, (C) Market value, (D) Cost approach, (E) Discounted cash flow analysis, (F) Capitalization of earnings ratio. **E,F**

Dr. Hilgers

continued from page 13



17. *Ideal orthodontic occlusion* in functional finishing phase (left). After vertical seating elastics are used (middle), the final *ideal occlusion* demonstrates an engagement of the teeth that has both occlusal harmony and resistance to rebound (right).

gives the rebound process a chance to express itself, allows time to detail the occlusion and further harnesses functional rebound. Of course, it is a luxury to be able to do this and it is often predicated on a rapid and predictable establishment of a Class I relationship. Overcorrection implies a transitory nonfunctional occlusion that must be resealed in the final phases of treatment.

Breaking Up or Sectioning of Arches –

It often makes sense to free up individual teeth (or segments of teeth) for seating. Once the buccal segments have been overcorrected, releasing these teeth to settle (with or without adjunctive elastics) allows the musculature to take over in the posterior segments. If proper rotations and angulations of the teeth have been

previously established and arch symmetry has been created, releasing the upper arch to occlude with the lower can be very dramatic. The stronger the muscle pattern, the more potent this technique.

Conduct of Seating Elastics –

1. *Class II and Class III Vertical Elastics.*

If Class II elastics are used to correct the malocclusion, a vertical (seating) component should be added in a timely manner. Once the upper cuspid is on the downside incline of the lower cuspid, it is beneficial for the inclined planes to be in contact as often as possible. Class II vertical elastics that extend from the second molar over the mesial of the cuspid and down to the distal of the lower first bicuspid are ideal. This is like adding an extra muscle to the occlusion and helps prevent the extrusion of posterior teeth so common with intermaxillary elastics.

2. *Zigzag Elastics.* Commonly called the “one penny positioner,” posterior vertical or zigzag elastics are very efficient at seating the posterior occlusion. They are particularly useful if the upper arch has been slightly over-expanded (shouldn't be used in cases of maxillary constriction) and can be used to de-torque these teeth into occlusion. Care must be taken with zigzag elastics to the upper cuspids. They will de-torque the cuspids rapidly and break the contact with the upper lateral incisor. One way of compensat-

ing for this is to leave a sectional arch from cuspid to cuspid and then engage these teeth with the zigzag elastics.

3. *Short Triangle Elastics.* When two continuous arches are pitted against each other, short triangle elastics that start at the distal of the lower first bicuspid and extend over the mesial of the upper cuspid and down to the mesial hemi-hook on the lower cuspid are very useful. They place a short vertical pull on the dentition that is oriented straight vertically (i.e., no horizontal Class II or Class III component). Again, this serves to hold the inclines of the teeth together while compensation rebound occurs.

4. *Box Elastics.* Anterior box elastics are sometimes used to help seat the incisors. They should be avoided wherever possible, however, due to their propensity to cause root resorption. Triangular elastics that are maintained on the cuspids appear to have fewer side effects than anterior vertical or box elastics.

Conclusion

This article demonstrates the unique model of functional finishing. Techniques that use the natural occlusal forces of the teeth without overriding function have definite merit. The concept of slowly and consciously turning control of the occlusion over to the muscular pattern aids the clinician in this intricate and difficult phase in orthodontics.

“Techniques that use the natural occlusal forces of the teeth without overriding function have definite merit.”

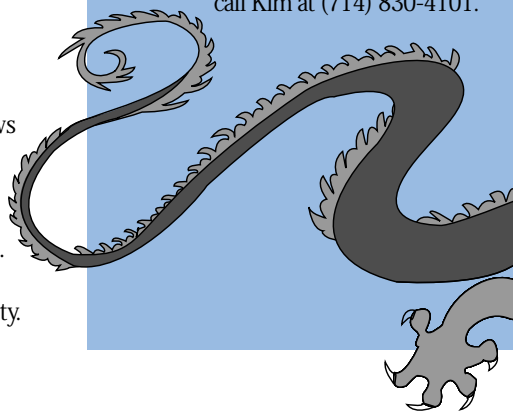
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Dragon Slaying 101

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previously microetched crowns. This is another reason to consider using an external lab for these appliances. However, the crowns should always be fitted in the mouth.

To facilitate appliance removal, use Chap Stick® on the occlusal of the molars before the appliance is cemented. This prevents the glass ionomer cement from sticking in the occlusal anatomy. Also, to reduce patient discomfort and movement, use topical anesthetic on the soft tissue where the bur will be used subgingivally.

I hope the CBJ makes your Class II corrections easier. By being able to expand with the appliance in place, fewer appliances will be needed. This cuts down on costs and the number of treatment visits. One last thing, please remember not to try any of these more exotic procedures until you are past the learning curve and are totally comfortable with the basic appliance.

Editor's Note: Construction and implementation of the Cantilever Bite-Jumper was presented by Dr. Mayes in his article, "The Single-Appointment Preattached Cantilever Bite-Jumper," in *Clinical Impressions*, Vol. 5, No. 2, 1996, Print #070-5311. For a copy of this issue, call (800) 854-1741, Ext. 7001, or (714) 516-7001.

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Lecture/Course Schedule at a Glance – Through December 1996

Date	Lecturer	Location	Sponsor, Contact and Subject
9/9	Mike Swartz	Dublin, Ireland	Trinity College; Dr. Lagerstrom 353 1 661 2072; New Archwire Technology
9/13	Mike Swartz	Moscow, Russia	Dental Complex; Dr. Voronin 7 812 107667; Orthodontics in the USA
9/13-15	Mike Scott	Jakarta, Indonesia	P.T. Medikapurna; Ms. Siregar 62 21 751 0484; Comprehensive Orthodontics*
9/15-16	Mike Swartz	St. Petersburg, Russia	Dental Complex; Dr. Voronin 7 812 107667; Biomechanical Principles
9/17-18	Mike Scott	Kuala Lumpur, Malaysia	Calmal; Mr. Loo 60 3 958 2717; Comprehensive Orthodontics*
9/18	Mike Swartz	Oslo, Norway	U. of Oslo; Dr. Büyükyılmaz 47 22 85 22 54; Achieving 97% Bonding Success
9/20	Bob Smith	Chicago, IL	PEP; (800) 854-1741, Ext. 7573; Seminar – “Efficiency Driven Profit”
9/20-23	Mike Scott	Manila, Philippines	AVM; Ms. Mandap 632 843 6208; Comprehensive Orthodontics*
9/21	Joe Mayes	Chicago, IL	PEP; (800) 854-1741, Ext. 7573; Fitting & Removing the Cantilever Bite-Jumper*
9/26-28	Wick Alexander	Arlington, TX	Dr. Alexander; Brenda (817) 275-3233; Alexander Discipline Comprehensive*
10/4	Bob Smith	Dallas, TX	PEP; (800) 854-1741, Ext. 7573; Seminar – “Efficiency Driven Profit”
10/5	Joe Mayes	Dallas, TX	PEP; (800) 854-1741, Ext. 7573; Fitting & Removing the Cantilever Bite-Jumper*
10/6-8	Kyoto Takemoto	Matsudo Chiba, Japan	Dr. Takemoto; R. Kishi 81 3 3432 0065; In-Office Lingual Orthodontics*
10/10	Wick Alexander	Jakarta, Indonesia	Trisakti U.; Ms. Siregar 62 21 751 0484; Alexander Discipline Advanced
10/10-12	Mario Paz	Beverly Hills, CA	Ormco & Spec. Appli.; Shelly (310) 278-1681; Lingual Orthodontics*
10/11-13	Wick Alexander	Jakarta, Indonesia	P.T. Medikapurna; Ms. Siregar 62 21 751 0484; Alexander Discipline Comprehensive*
10/14-15	Wick Alexander	Jakarta, Indonesia	P.T. Medikapurna; Ms. Siregar 62 21 751 0484; Contemporary Mechanics
10/14-16	Didier Fillion	Paris, France	Dr. Fillion; 33 1-47042793; In-Office Lingual Ortho., Typodonts, Lab & Clinic*
10/17	Wick Alexander	Fukuoka, Japan	Japan Ortho Society; Lecture – “Contemporary Mechanics”
10/18-19	K. Takemoto/G. Scuzzo	Munich, Germany	Ormco GmbH; Mr. Walburger 49 8381 92180; Lingual Orthodontics*
10/18-20	Randall Moles	Racine, WI	Dr. Moles; Joyce (414) 884-7700; In-Office Hands-On TMJ Seminar*
10/20-22	Wick Alexander	Cebu, Philippines	AVM; Ms. Mandap 632 843 6208; Alexander Discipline Comprehensive*
10/24-25	Wick Alexander	Manila, Philippines	AVM; Ms. Mandap 632 843 6208; Contemporary Mechanics
10/26-28	Wick Alexander	Manila, Philippines	AVM; Ms. Mandap 632 843 6208; Alexander Discipline Comprehensive*
10/30-31	Wick Alexander	Bangkok, Thailand	Accord; Ms. Suchada 662 214 5290; Contemporary Mechanics
11/1-2	David Sarver	Austin, TX	Southwest Soc. of Ortho.; Lecture – Orthodontics & Aesthetics
11/1-3	R. Baker, Jr./J. Wildman	Rochester, NY	Eastman D.C. Ortho. Dept.; Connie (716) 275-5064; Ling. Ortho Biomech. & New Appliance
11/3-5	Wick Alexander	Porto, Portugal	AOSM; Josiane 33 1 48591617; Alexander Discipline Comprehensive*
11/7-8	Wick Alexander	Porto, Portugal	AOSM; Josiane 33 1 48591617; Alexander Discipline Advanced
11/7-10	Jerry Clark	Orlando, FL	AAO Practice Transition Conference; (800) 424-2841; Lecture – Practice Transition
11/8-10	L. Batres/J. Calderon	Belo Horizonte, Brazil	Dr. Pedreira; C. Miqui 55 11 8875234; Alexander Discipline Comprehensive*
11/10-12	Wick Alexander	Paris, France	AOSM; Josiane 33 1 48591617; Alexander Discipline Comprehensive*
11/14-15	Wick Alexander	Paris, France	AOSM; Josiane 33 1 48591617; Alexander Discipline Advanced
11/14-16	Louis Batres	Ica, Peru	Peruvian Dental Society Convention; Lecture – Basic Alexander Discipline
11/15-16	Randall Bennett	New Orleans, LA	Joan Garbo & Assoc.; Katie (800) 854-1741, Ext. 7353; “The Orthodontist as Entrepreneur”
11/15-16	Barbara Brunner	Orange, CA	PEP; (800) 854-1741, Ext. 7573; Seminar – Executive Presentations
11/16	Wick Alexander	Paris, France	AOSM; Josiane 33 1 48591617; ADI Study Club
11/16-17	Bob Smith	Frankfurt, Germany	Ger. Ortho Soc.; Dr. Gross 0202-245 2226; Efficiency, Profitability, Herbst Appliance
11/17-19	D. Fillion/C. Gorman	Brussels, Belgium	AOSM; Josiane 33 1 48591617; Ling. Ortho. Lect. & Typo. Exercises*
12/4-5	Kyoto Takemoto	Matsudo Chiba, Japan	Dr. Takemoto; R. Kishi 81 3 3432 0065; In-House Lingual Typodont Course*
12/16-18	Didier Fillion	Paris, France	Dr. Fillion; 33 1-47042793; In-Office Lingual Ortho, Typodonts, Lab & Clinic*

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