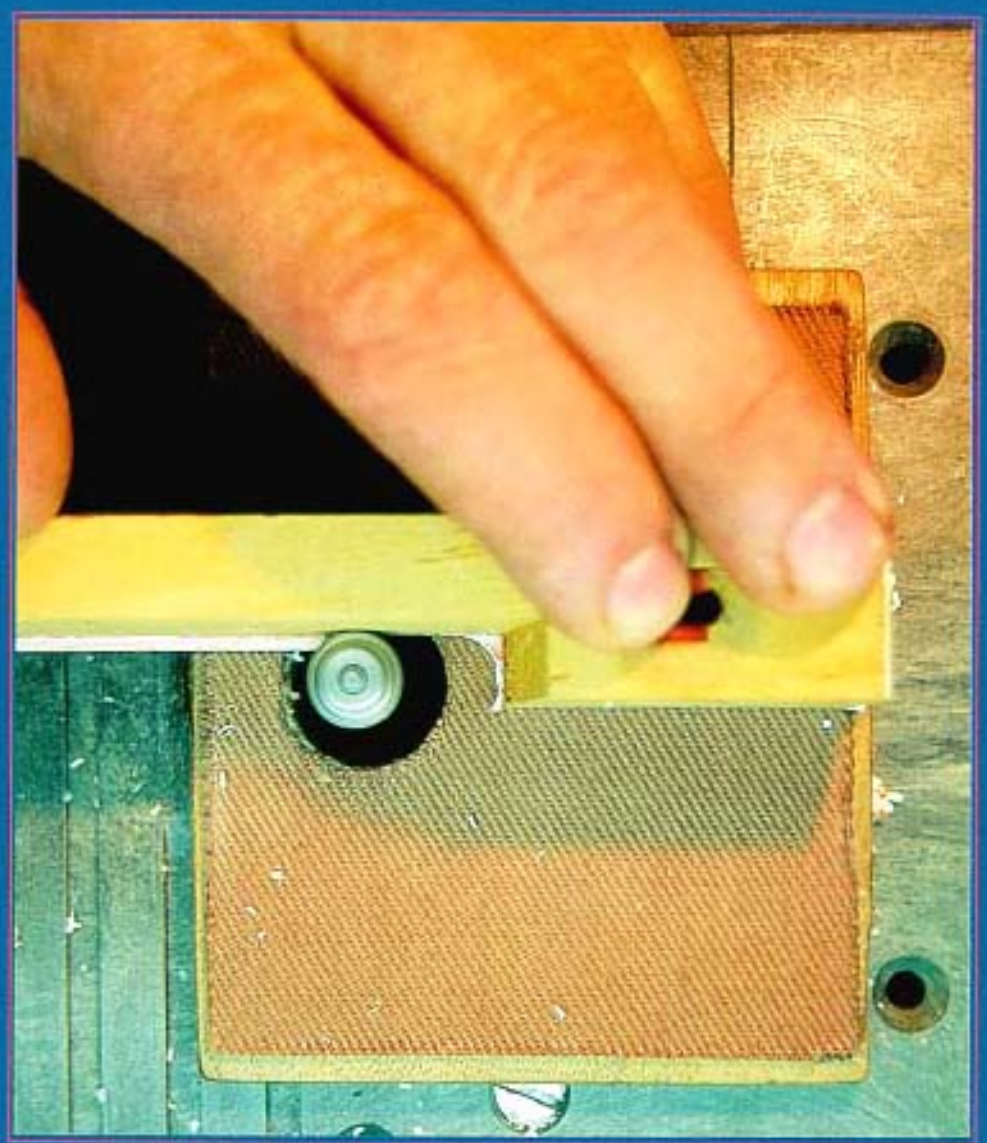
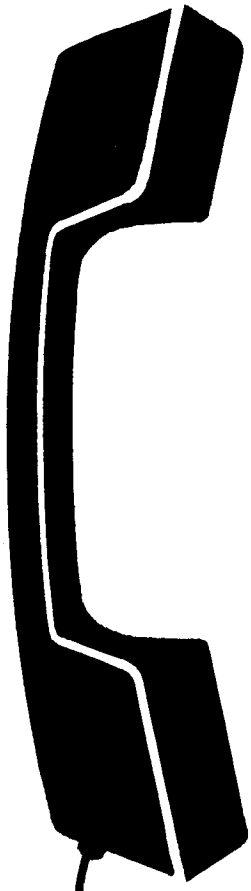
PIANO TECHNICIANS

Journal

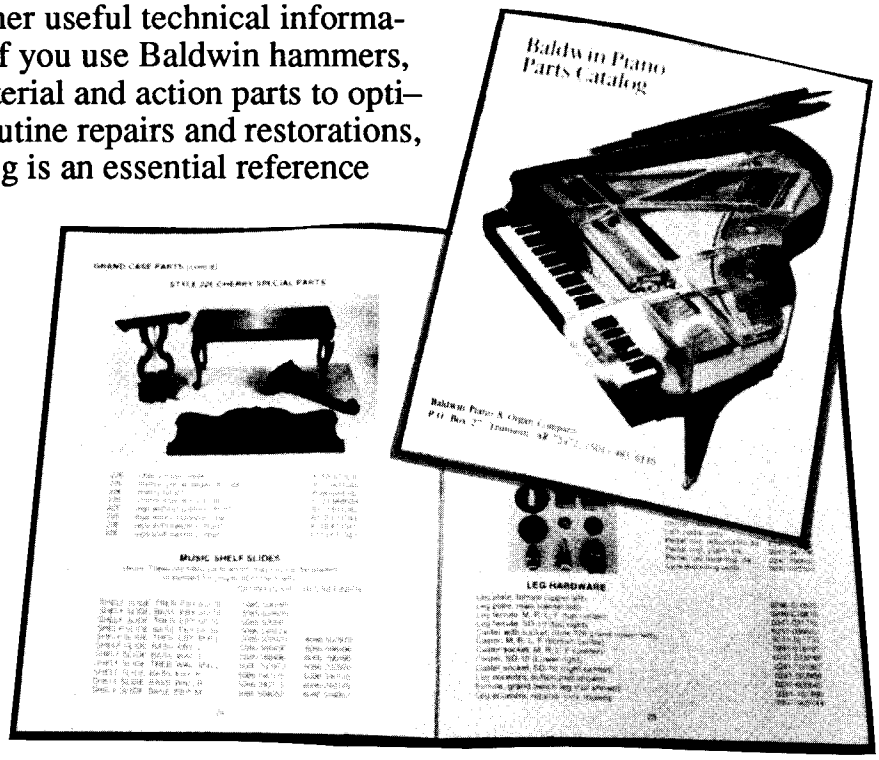
MAY 1991



Technical help from Baldwin is just a phone call away . . .



Like this free 36-page parts catalog with supplementary price list, for example. It provides a complete listing of all Baldwin piano parts as well as other useful technical information. Many of you use Baldwin hammers, pinblock material and action parts to optimize your routine repairs and restorations, so this catalog is an essential reference tool for you.



I'm Linda Gann, and I'm the person you usually talk to when you call Baldwin Tech Service for parts. For five years I've been coordinating parts orders and shipments for Baldwin grand and vertical pianos. During that time I've become very knowledgeable about Baldwin parts and your technical needs. I enjoy using my expertise to help you make the right choice of Baldwin materials for your application.

Call me today for your free parts catalog or to order piano parts.

Call 501-483-6116

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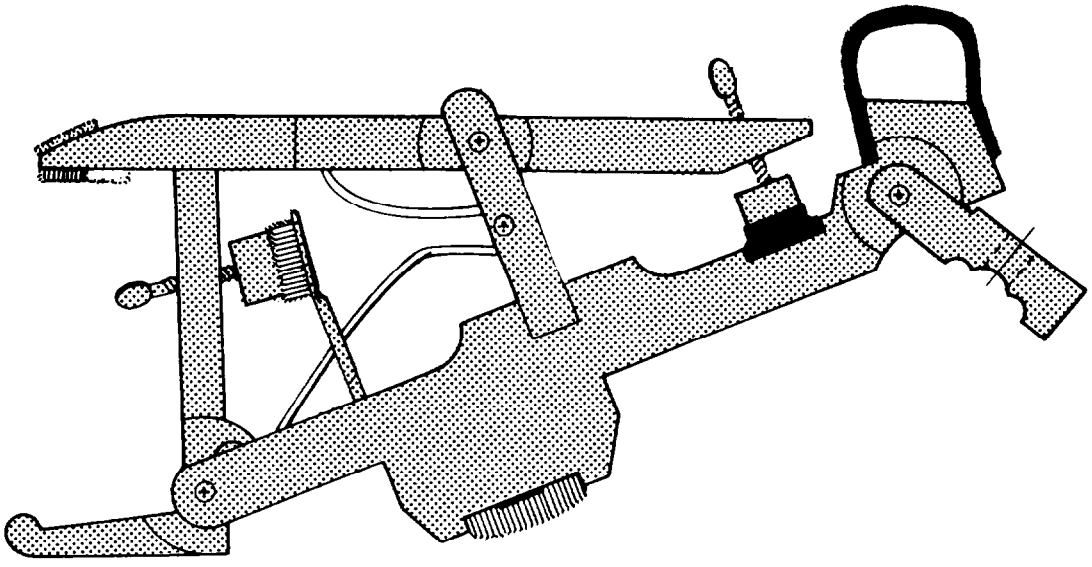
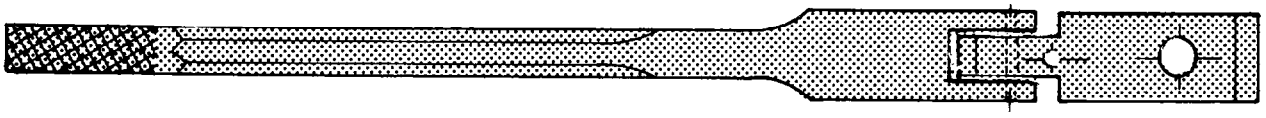
Baldwin

Piano Technical Service Department,
Highway 63 South, Trumann, AR 72472-9604

TOKIWA

JAPANESE GRAND ACTION PARTS





Schaff now has available the complete line of Tokiwa grand action parts. Twelve styles of hammer shanks with flanges, three types of whippens, backchecks with and without wires, shank knuckles, Steinway whippen flanges as well as various old style Steinway upright action parts are being inventoried for immediate shipment. No longer is it necessary to buy from single source suppliers — SCHAFF can accommodate all of your action part requirements. Write or call for our descriptive brochure with prices.

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PIANO TECHNICIANS
Journal

MAY 1991 — VOLUME 34, NUMBER 5 OFFICIAL PUBLICATION OF THE PIANO TECHNICIANS GUILD, INC.

ABOUT THE COVER:
Router trimming of new keytops explained by Bill Spurlock in this month's "Practically Speaking" article beginning on page 34.

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PRESIDENT'S MESSAGE

Planning For Your Future

Nolan P. Zeringue, RTT
President

At a PTG chapter meeting last week we had a very interesting meeting. The technical wasn't about pianos this time, but about us and our businesses. Most of us are in this profession because we like what we do and feel fortunate to have the opportunity to do this for a living. How much thought have we given not to the technical end of our profession, but the business end of it?

There have been a great number of very good articles that have appeared from the Economic Affairs Committee and from other sources in the *Piano Technicians Journal* to give us information on the daily operation of our businesses. How many times have you passed over these articles because they didn't seem to be technical in nature?

I guess I am addressing these few thoughts to those of us who are independent technicians, and don't depend on a paycheck from another profession, educational facility or a store. Many times if we are employed by someone, there will be benefits such as profit sharing and retirement plans. If you are an independent technician as I am and your spouse does not work outside of the home, and if there is to be medical insurance, retirement, savings of one kind or another, emergency reserve, or whatever, then guess who must be disciplined to provide for it? Right! *You*!

I see people approaching retirement age who have only Social Security to look forward to. I can't imagine that they will survive on that! I started rather late for my financial planning; I was in my 40s. I feel good now with having started something even if it was a bit late, but we won't have to approach retirement age with nothing and the prospect of having to continue to work to make ends meet.

Even if you are not a financial wizard there is much valuable information out there today to help you understand strategies in financial planning. There are many good books and there are even a number of call-in radio shows every week. If all else fails, there are professionals you can engage for your individual planning needs.

The first and most important rule in financial planning as I see it is "pay for yourself first." You have to put money aside for your taxes (hopefully). Put some money aside for *you*. Try 10%, and if you can't do that start with half that amount, but most of all, *you can never withdraw it!* Pay or deposit into a plan that you cannot "borrow" from when times get hard.

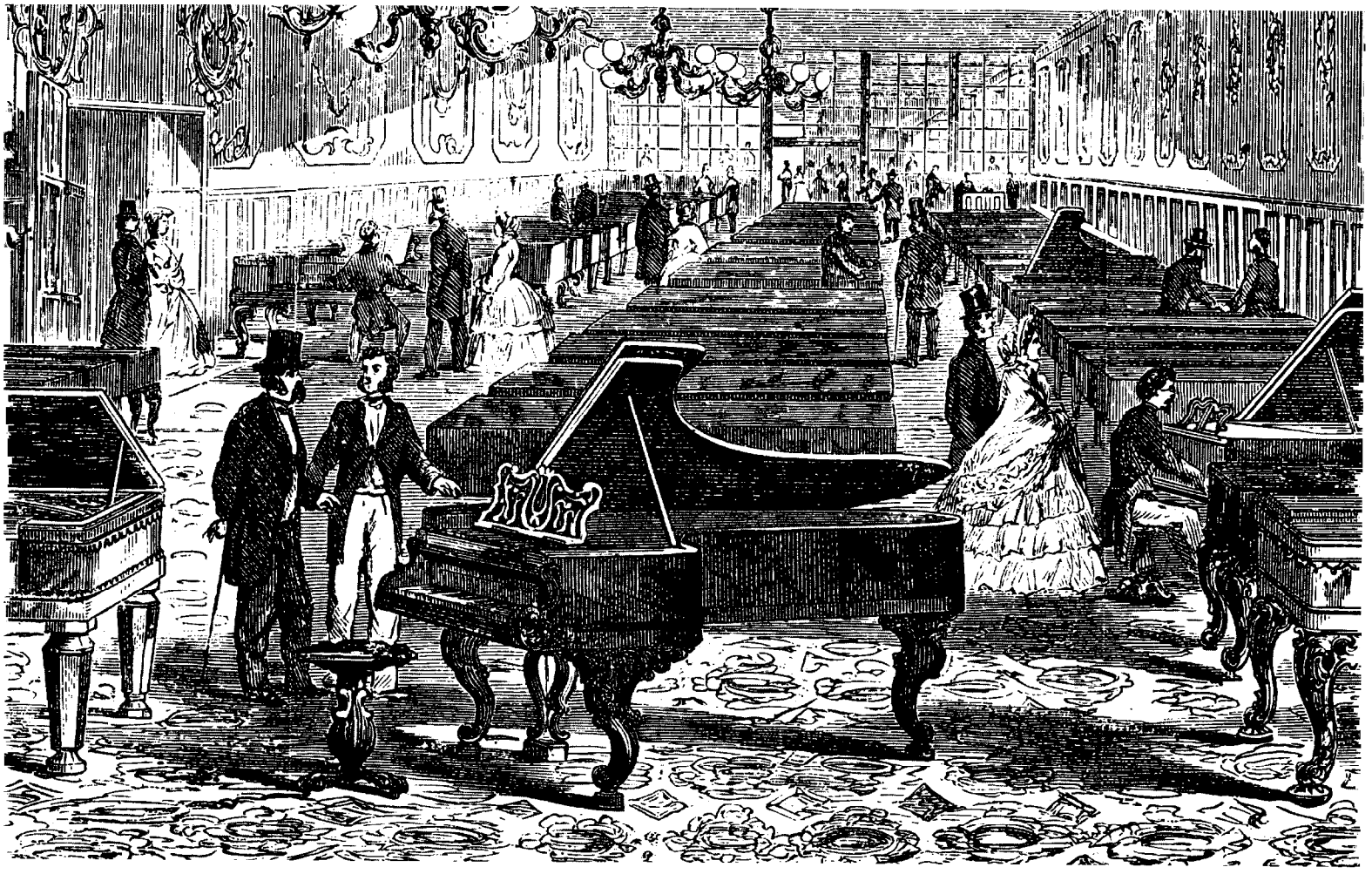
I want to give thanks and credit to Dan Hall of Hall Piano Co. for our financial planning technical at our meeting that brought much of this to mind. Dan pointed out that a great deal of his and his partner John Wright's financial planning wasn't in financial securities, but was in the purchase of pianos and real estate. Dan and John scraped money together every possible chance they could to buy another piano to put out on rental.

Hence, more income to the business. Sometimes I am sure this was hard to do when a shiny new car might have been a "necessity." But they apparently never deviated from their plan, and to look at their business today it is very easy to see that this plan and this advice is good, sound business practice.

It is a very difficult thing to discipline oneself to set a plan in motion and never pull out. It must be done if you have no other retirement plan to take effect when you might not be able to work anymore even if you want to continue working. My plans are set up with a debit against my checking account, and I never have to think about writing a check to deposit. I know how much money needs to be there every month and we make sure that it is there.

Start now! A plan for you. I can assure you that this is something that you will never be sorry to have gotten into. No one will plan ahead for you if you don't. As Dan told us, spendable funds can come from two places; monies that are derived from the work you do, and monies which come from invested funds paying you interest or appreciated value on investments.

Some manufacturers ask your customers to invest in their past.



Young Chang invests in their future.

Some of the most "prestigious" instruments in the world are also the most expensive. At Young Chang, we don't believe a piano's value is limited to the number on its price tag or its place in history.

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We believe the instrument that's most appreciated is the instrument that's most played. And as one of the most popular imported pianos, the value of Young Chang pianos appreciates like few other instruments.

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Marketing

Larry Goldsmith
Executive Director

Many people have the idea that marketing is somehow sleazy or marginally dishonest. If you provide a good service or product, the logic goes, then that should be enough. Customers and clients will find their way to you.

There are two reasons for this misconception. First, marketing is based on the idea that perception is more important than reality. As Al Reis and Jack Trout wrote in their landmark 1981 book "Positioning: The Battle For Your Mind," "To be successful today, you must touch base with reality. And the reality that really counts is what's already in the prospect's mind." Sound vaguely suspicious? It's true, though. If you don't know about a product or don't have a positive image of it, you won't give it a chance.

The other reason for marketing's image problem might be termed "clutter." When Reis and Trout wrote their book, the per-capita consumption of advertising in America was about $200 per year. It's much higher today. If you spent $1 million on advertising in 1982, you bombarded the average consumer with less than a half cent's worth of advertising, spread out over 365 days.

Think how much of your daily mail goes unread into the trash. Think how your hand reaches for the television's remote control when a commercial comes on. Think how many message T shirts you see in the course of a day, and how many you remember. Think how much money was spent to bring those messages to you, and how casually you ignored them. We've become very good at tuning out the clutter, at cynically doubting everything we hear.

So if it's so hard to get your message through, why bother? Because as consumers have gotten better at discriminating among sales messages, our marketers have improved as well. The secret is targeting your message to a specific, interested segment of the audience. We've all seen ad campaigns that have attempted to win the hearts and pocketbooks of consumers by sheer weight of advertising dollars. That strategy only works if you can budget an exceedingly large amount of money, and even then, its success is questionable. Watching a boring commercial is bad enough, but seeing it 20 times is sheer torture. You'll remember that product, but how?

This is where marketing comes in. It's a process that involves more than simply paying media types large amounts of money to print or broadcast your message. It also involves research and strategy — figuring out who you should be talking to and, yes, even what you should be saying.

"That's easy," you say. "Of course we know what our message should be." But step back and look at the problem as a consumer. As a consumer, you don't really want to hear how many years of research went into developing a widget. What you want to hear is how it's going to make your life easier and better, or how it's going to save you money. And you want to hear it quick and simple, because thousands of other messages are coming in at the same time.

Only when you've identified your audience and have boiled your message down into a clear, concise, easily communicated idea do you focus on how it should be said. Advertising and public relations are to marketing what a screwdriver is to servicing a piano. They're tools, and they can be marvelously effective, but you might not use them on every job you tackle.

By the way, did you ever wonder about the source of the term "sleazy?" It comes from Silesia, a town in Poland that once produced fine cotton linen. This fabric was known as "Sleazy Holland," Holland being a type of cloth. Unfortunately, imitators flooded the market with inferior imitations bearing the town's prized name. From being a name that defined quality, Silesia, or sleazy, came to mean cheap, shoddy merchandise or questionable business practices.

Sounds like a marketing problem to me.

Weber

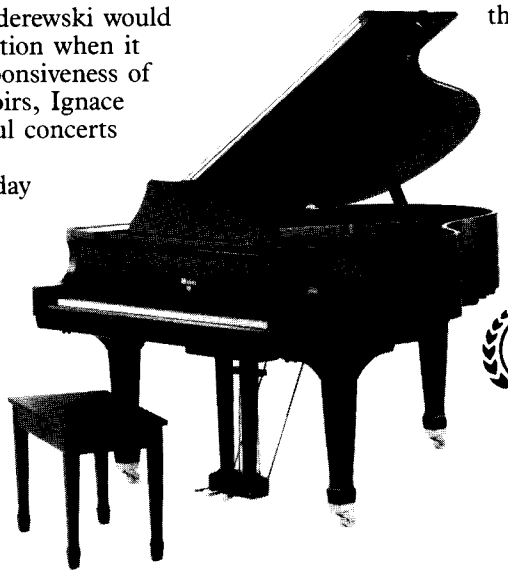
A Piano Worth Recommending.

The brilliant and innovative Paderewski would settle for nothing less than perfection when it came to the tone quality and responsiveness of his piano. According to his memoirs, Ignace Paderewski played many successful concerts on a Weber Piano.

Though the Weber Piano of today is different than the one used by Paderewski, it is still made of the finest materials from around the globe and is carefully crafted using the most modern production methods.

As such, the Weber of today is a piano that you can rely on to provide you and your clients with the consistent tone and responsive touch which comes only from total integrity in the scale and action mechanism.

Weber is a piano you can rely on to provide your clients with the most value in its price class, a piano with quality that belies its affordable price. The fact is, more and more of your customers will be seeing the Weber Piano. When they ask your opinion, give them an informed one by finding out for yourself what these instruments have to offer. For more information call us at 800-346-5351.



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KEYSTONE...

The Philadelphia Story

Ernie Juhn, RTT
1991 Institute Director

In this issue you will find the complete schedule and all the class descriptions for the Technical Institute in July. If you had any doubts as to whether or not you should attend this convention, I am certain that after you have seen the details, there will be no doubt in your mind that you can't afford to miss it.

This is the first time that a computer is used to prepare a technical institute. Let me tell you that it is not easy for an old dog to learn new tricks. Well, I may not employ the most sophisticated methods, but I have learned to apply some computer techniques. The result should be a more reliable schedule, less mistakes and an easier way for the institute office to cross-reference information. One of the first things you will notice is the fact that (hopefully) there will be fewer last minute changes.

Now for some practical suggestions. Since class titles generally don't give you enough of an idea about the exact content of the class, it is a good idea to read the descriptions. You might then use a "highlighter" pen and mark the sessions you want. Please notice that most classes are not scheduled at the same time slot when they are repeated. That will give you a better chance to attend almost every class you want to see.

There will also be Mini-Technicals which will run simultaneously. They will feature well-known instructors discussing specific, highly focused topics. Since they are concentrated into 30-minute periods, they offer the most possible information in the least amount of time.

Finally, let me again point out that we also have a very fine private tutoring program which allows you to pick your own subject and we will supply a qualified instructor. (The deadline for that program is June 10.) For last-minute information — make sure to read next month's "Philadelphia Story."

1991 Technical Institute Class Descriptions

88-Note Stretch Tunings - Easy As FAC — Albert Sanderson — *Inventronics*

The traditional stretch tunings use one stretch number measured at F4 to create a 42-note tuning. Now the new FAC method uses three stretch numbers to create 88-note tunings. These FAC tunings sound better because they are better tailored to fit the individual piano.

Accurate Grand Hammer Installation — David Snyder — *Reading-Lancaster, PA, Chapter*

This class will demonstrate a simple and accurate method for hanging grand hammers. The fixtures used are basic and can be easily duplicated. There will also be a quick overview of preparatory work necessary prior to the installation of any set of grand hammers.

Action Centers - The Secret Of Consistent Touch — Don Mannino — *Young Chang America*

This class is in two parts, the first focusing on how action centers work and the second demonstrating an efficient and highly accurate method for recentering using broaches (as described in the instructor's article in the October 1988 *Journal*). The discussion will include: evaluating the amount of friction needed for any given action center, the effect of pinning on touch and tone, the various types of bushing cloths encountered, and a demonstration of flange rebushing.

Administering The PTG Technical Exam — Bill Spurlock — *Sacramento, CA, Chapter*

All aspects of technical testing will be covered, including helping examinees prepare, gauging their readiness, acquiring exam props, running the exam, and handling the paperwork. (RTTs only)

Aftertouch - The Secret To Happy Pianists — Kevin Leary — *Cleveland, OH, Chapter*

This class magnifies several reasons why aftertouch must be accurate and uniform. Discussed are ways to achieve this goal, and action relationships that affect it.

Amazing Wood Behavior — Webb Phillips — *Webb Phillips and Associates*

Wood experiments like you have never seen before. We take you from the freshly-sawn log, through the birth, life and death of the piano. Classroom experiments you will find hard to believe. Then we show you how this applies to the piano, the customer and putting $$$ in your pocket.

Analyzing Soundboards Old And New — Christopher Robinson — *Connecticut, CT, Chapter*

This class will examine in detail the structural components of soundboard design and installation as well as its musical response characteristics. When does an old soundboard fail beyond repair? What are the processes of installing a new soundboard? With slides and mechanical models.

Basic Tuning For Everyone — Jim Coleman, Sr. — *Phoenix, AZ, Chapter*

This class is for those who would like to review the basics of piano tuning. It will cover: tuning pins and strings, tuning levers, heads and tips, tuning lever position, frequency, hertz, beats and partials, octaves, simple, complex, balanced and stretched temperament and math.

Bechstein - History And Future Told By Its Technician/Owner — Karl Schulze — *C. Bechstein*

Mr. Schulze will cover the history of C. Bechstein, philosophy and techniques of tone production as well as choice of materials and their applications.

Bridge Repair And Recapping — Nick Gravagne — *New Mexico, Chapter*

Unquestionably a solid bridge is essential for successful rebuilding. But many old bridges are either cracked, broken, loose or otherwise compromised. Some of these tired bridges can be renewed through repair or reconditioning techniques such as renotching or epoxy fillers. Other bridges, however, are beyond the pale and need recapping. Nick's class will blend lecture, slides, chalkboard, props (bridge materials, etc.), along with demonstrations of actual work performed—renotching, epoxy fill, and carving a new cap. If you are serious about piano rebuilding you don't want to miss this varied and interesting class.

College and University Technicians' Seminar — Tom McNeil — *Buffalo, NY, Chapter*

Open to all interested technicians. The first period's presentation will be "Designing A Piano Maintenance Program," by Lou Tasciotti, RTT, chief piano technician for the School of Music at the University of North Texas. Tasciotti has designed and initiated institutional piano maintenance programs for both large and mid-sized schools. Topics include inventory control, concert schedule management, shop design, training and supervising assistants, work flow, down time, and faculty/student/technician relations.

The second period will include the traditional College and University Technicians' Forum. It will begin with "Enhancing Your Status," a panel discussion by several leading university technicians lead by Greg Hudak, RTT, of Peabody Conservatory. After brief presentations by the panelists, the forum will be open for a discussion on this and other topics of interest.

A post-convention tour of Philadelphia's famed Curtis Institute of Music is planned by the College & University Technicians' Committee. It will take place on Wednesday, July 17 following the Closing Luncheon. This excursion requires a reservation which may be made only during the College & University Technicians' Seminar.

Concert Ready Voicing — Ari Isaac — *A. Isaac Pianos*

Concert-ready voicing will give you the control you cannot do without when called upon to prepare a piano for various types of concerts, recitals, chamber music or orchestras. These are all different and we'll explore each one. What can you get a hammer to do? What are the limits? How many needles? Where are they most effective? How much hardness will give you the kind of tone you're after? To juice or not to juice, where, and with what? What can you and only you give an artist tonally that will make him eternally grateful to you and what, above all, knowledge and skills will give you control?

Disklavier - The Future Of The Piano — Bill Brandom, Dean Garten — *Yamaha*

This class will begin with a short overview of the functions and various capabilities of Disklavier pianos. Following this, you will receive the information necessary to perform each aspect of acoustic service to the three different types of Disklavier pianos. Diagnostic programs and tests incorporated in each piano will be covered, along with the basics of Disklavier system service.

Expand Your Tuning Business Through Humidity Control — Steve Smith — *Dampp-Chaser*

After showing Randy Potter's introductory video tape, copies of which are *free*, the class will cover Dampp-Chaser's Piano Dealer Poster program, and how you can use it to build your tuning practice. Remaining time, if any, will be devoted to recent product improvements and answering questions about techniques for selling and installing humidity stabilization systems.

From Keyboard To Disk Drive — Ron Berry —*Indianapolis, IN, Chapter*

A basic class about computer hardware, software, and applications to the piano business. It covers word processor, spread sheet, and data base. It investigates using computers for customer record keeping, financial records, reminder cards, string scaling, etc. No computer experience necessary.

Gadgets And Gimmicks Galore — Ralph Stilwell — *Central, IL, Chapter*

A fast-moving class featuring tricks and tools for repairing actions, keys, bridges, strings and case parts.

Getting To The Bottom Of It — Rick Baldassin — *Utah Valley, UT, Chapter*

An in-depth discussion of tuning the bass of the piano. This class will explore both theory and practice to develop a framework for bass tuning, either aurally or with an electronic aid. This subject will be discussed both as it relates to grand pianos as well as small uprights. Class members will participate in determining what type of octaves sound

the best, and then will discover why. Let the Tuning Editor of the *Journal* help you better understand the decisions and processes involved in getting to the bottom of "it."

Grand Dampers - Installation, Regulation and Troubleshooting — Gary Green, Scott Jones — *Steinway & Sons*

A refinement of previous damper classes, in this fast-paced workshop, you will participate in the construction and installation of a model damper system. All points, from felt gluing to sostenuto regulation, will be covered. Simultaneous video coverage will enlarge hands-on techniques.

Grand Hammer Installation - Factory Style — Joel & Priscilla Rappaport — *Austin, TX, Chapter*

A hands-on class that takes the mystique out of grand hammer gluing. Everyone gets to participate. Experience reaming, gluing and filing hammers on an action model. This is a factory method that results in speed and accuracy. (Class limited to 32.)

Hammer Tone Regulation — Wally Brooks — *Brooks, Ltd.*

Wally will give a hands-on demonstration of the voicing of a complete set of new hammers as was discussed in the "Tone Building The Hammer" class. There will be minimum discussion in this class. It is recommended that you have seen the "Tone Building" class or one of Wally's hammer voicing demonstrations first.

House Calls - Be Equipped — Isaac Sadigursky — *South Bay, CA, Chapter*

What you will need to work on any kind of piano — and how to carry it. Are you ready to do the job? Isaac is. He will share with you what kind of tools and supplies he carries in his van to handle it all. During this fast moving presentation Isaac will demonstrate and show you (with the help of slides) how the most complex and unusual jobs can be performed successfully and professionally.

Keys To Where The Action Is — Jamie Marks — *Baldwin*

This class will show manufacturing processes that relate to the technician and rebuilder. Action and key building will be targeted, giving this class a wide variety of subjects to encounter. One showing a manufacturers' approach to traveling, also a few manufacturing terms, grubbing, frazing, etc. will be discussed.

Learn To Speak Piano — Ray Chandler — *Kawai*

It has been said that piano technicians have a language of their own. This class will cover communication problems that technicians face in a variety of situations. Find out how to more effectively interpret and interact psychologically with "piano world" personalities.

Mastering Friction: The Balance Weight System — David Stanwood — *Stanwood and Co.*

Learning the Balance Weight System will give the technician a complete understanding of key balancing theory as well as a method for identifying and controlling the multiple components of key resistance. A fresh approach to this important aspect of keyboard work.

Pianos Without Sheep? — David Stanwood — *Stanwood and Co.*

Wool felt is a vital component in the construction of pianos yet it remains one of the least understood. The basic Wool Science class gives the technician new insights into the properties and origins of wool felt. Includes a fascinating presentation of scanning electron microscopy.

Pinblock Installation — Andre Bolduc — *Andre Bolduc, Inc.*

This captivating class will cover pinblock design and theories. Reasons for careful fitting to the plate and case. Explanations on elasticity limits of woods and different properties. Drilling — tips and tricks. A masterful class taught by a master of wood.

Practical Appraisal And Evaluation — Bob Russell — *Cleveland, OH, Chapter*

This class will be a hands-on appraising workshop. We will cover evaluating pianos as well as how to appraise pianos for the costumer, buying, selling and insurance appraising. Plus the do's and don'ts of appraising.

Preparing For The PTG Technical Exam — Bill Spurlock — *Sacramento Valley, CA, Chapter*

This class covers basic grand and vertical regulation, including regulation principles, choice of correct measurements, the most efficient order of steps, and proper tool usage and technique. Efficient methods and tools for doing string repairs, hammershank replacement, hammer filing, flange rebushing and repinning will be presented. Although especially designed to help those preparing for the technical exam, this class has much to offer technicians at all levels.

Preparing For The PTG Tuning Exam — Mike Carraher — *Reading-Lancaster, PA, Chapter*

The closest thing you will get to the actual test. This dry run procedure includes test set-up background, test room logistics, helpful hints on tuning procedures and powerful confidence building techniques. This class is a must for any Associate taking the tuning exam and a valuable experience for seasoned RTTs. All are welcome.

Professional Burning In And Touch Up — Webb Phillips — *Webb Phillips and Associates*

Professional burning in and touch up, home or shop. We will show you professional factory methods to burn in and touch up with limited materials. Take 30 seconds to make a small burn in instead of 30 minutes. French polish, make your own touch up stains etc. without expensive kits.

Refining The Performance Piano - A Technical Approach — The Yamaha Team — *Yamaha*

They are performance pianos. That doesn't necessarily put them into the realm of the big "concert" instruments. Still, these pianos—along with the musicians who play them—have some unique and specialized needs.

This three-hour class from the Yamaha Team will view total piano service from a slightly different angle. Tools. Tips from the pros. How regulating affects voicing, and vice-versa. Some different approaches. These will combine with some totally new demonstration techniques to give you a picture of total service you've never seen before.

Reliable Grand Regulating By Checklist — Danny Boone — *Heart of Texas, TX, Chapter*

A reliable step-by-step checklist of regulation procedures, designed to maximize efficiency in grand regulation, will be introduced in this class. Emphasis will be given to the practical and logical relationships which exist between the many regulating steps.

Restringing And Repinning The Painless Way — John Zeiner — *Lehigh Valley, PA, Chapter*

This class will cover repinning, different methods of restringing, repinning with old strings, being neat (all beckets the same direction), capo bar shaping and repair, agraffes, plate felting, tuning pin torque, tear down and reassembly (plate location, bass string pattern, measurements, etc.) and what to know about tuning pins.

Resurfacing Vertical Piano Hammers — Joe Garrett — *Portland, OR, Chapter*

Hammer felt surfacing is the key to the voicing process. If not performed properly it is frequently the reason for an unhappy client. In this class Joe will demonstrate how to successfully resurface vertical piano hammers (including spinets). Various techniques will be discussed and Joe will even give away a few prizes (tools) in each class. A must for the practicing "all around" technician.

Secrets Of The Superglues — Ed Dryburgh — *Dryburgh Adhesives*

Practical applications of "Hot Stuff" adhesive products with respect to all aspects of piano repair, both in shop and home. Cut your repair time to minutes rather than hours.

Servicing The Service Business — Janet Leary — *Cleveland, OH, Chapter*

Providing good service is a challenge. In this class we will troubleshoot problem areas specific to piano service and discuss practical methods for developing and maintaining a solid piano service business.

Shop Procedures For Fun And Profit — Jim Harvey — *Western Carolinas, NC, Chapter*

In his all new class, Jim takes it off the road and into the shop. Don't worry. There will still be plenty of tools and gadgets featured this time shown in conjunction with actual shop work that will enable you to do many common and not so common procedures in record time.

So You Want To Be A Concert Technician? — Norm Neblett — *Los Angeles, CA, Chapter*

All phases of concert work will be covered; pianos, artists, locations, contracts and working relationships. True experiences will be used to illustrate important points. Key technical items to check before a concert, weather control, effects of lighting, moving and air conditioning will be covered, as well as advantages and negatives of a concert position representing over 35 years of concert experience.

Spielart - How To Determine Tone And Touch Quality — Ed McMorrow — *Seattle, WA, Chapter*

This class contains techniques and descriptions proven to enable the skilled technician to predictably and consistently achieve the finest and highest quality of tone and touch. The important tonal consequences of the relationship of each component of the piano to the others are described in new and consistent ways. Many of the important physical principles of the largely empirical practice of piano technology are expressed in simple ways. You will learn how "Spielart" or what could also be called "feedback mechanisms" are the most effective way to determine how one part should fit to another. Mastery of these techniques will take much of the mystery out of what makes a great piano. Piano service professionals whether neophyte or grandly experienced would be well advised to be current with this material.

Temperaments Of The Masters — Randy Potter — *Randy Potter School*

Randy will teach the temperaments and checks of James Coleman, Sr., the late George Defebaugh, Ernest John and Franz Mohr, and the two temperaments he uses to teach beginning and advanced tuners to hear well and tune better. Included will be the checks they use, and why each like their chosen temperament.

The Alexander Technique For Piano Technicians — Wade Alexander

This class will present the Alexander Technique as a method which will help us learn to perform our tasks with minimal mental and physical stress. The tuning task alone, aside from repair and rebuilding work, causes tremendous physical stress on our bodies. We will examine how learning the Alexander Technique can add the dimension of consciously controlled activity to our skills so that we are able to do our work without slow self-destruction.

The False Beat Stops Here — Susan Graham — *San Francisco, CA, Chapter*

Properly treating string termination points can greatly improve tuning and tone. This class will include discussions of bridge pins and notching, capo bar treatment, and agraffe renewal and replacement. It will include techniques for both rebuilding and home service.

The Fandrich Upright Action - A Grand Action For The Upright Piano — Darrell Fandrich, Chris Trivelas — *Fandrich Design, Inc.*

This new action allows upright pianos to play with the superior control, touch, sensitivity and repetition of the finest grand piano actions. Differences in performance and design between traditional grand and upright actions will be discussed along with the fundamental design principles of the Fandrich Upright Action, which will be in production soon.

The Future Of Piano Service Is Now — Marshall Hawkins — *Washington, DC, Chapter*

What was your goal when you began servicing pianos? Have you reached that goal? In this age of fast-moving technology, what can be expected in terms of service as we move into the next century? These questions and much, much more will be addressed in this long overdue class.

The Impossible Tuning — Virgil Smith — *Chicago, IL, Chapter*

In this class Virgil will demonstrate how to do the finest tuning aurally with consistent beat progressions of all intervals and beatless octaves, double-octaves, and even triple and quadruple

octaves without using matched partials or exact beat speeds. It is called "The Impossible Tuning" because the method used for tuning octaves is considered impossible by some experts. It will also include a unique approach to temperament tuning which lets the piano dictate the beat speed and interval relationship that works best for the particular instrument.

The Perfect Tuning — Steve Fairchild — *South Florida Chapter*

Steve will present his incredible "State-of-the-Art" technique for doing a perfect aural tuning using a pair of matched accu-tuners. All new 1991 formula upgrades will be available to those attending this dynamic high-tech class.

The Ups And Downs Of Keys — Lonnie Young — *Wurlitzer*

This class will end where action regulation classes begin. A how-to class on restoration of keys and actions in preparation for regulation. It will be sure to put money in your bank.

Tone Building the Hammer — Wally Brooks — *Brooks, Ltd.*

A thorough discussion and demonstration of the process of putting a new set of hammers into their optimum working state, and the art of listening to tone.

Tone Building The Piano — Wally Brooks — *Brooks, Ltd.*

A thorough discussion and demonstration of the cause and effect on tone by strings, bridges, action parts, etc. and the adjustments that the technician may do to a piano after manufacture or rebuilding.

Upright Regulation From Design To Installation — Jon Light, Roger Weisensteiner — *Kimball*

This class on upright regulation will be a hands-on class with a thorough explanation of upright action and friction points, upright action manufacturing, upright action installation and field service procedures and regulation to service an upright (console and studio) action and key assembly.

Vertical Regulation The English Way — Ralph Long — *England*

What's the use of regulation if the fundamentals (basics) are not correct? What are these and how necessary are they? How right should they be? What if the client does not want the cost of major repair, can you still regulate the piano? Yes, but how??!! How do you cope with regulating bird-cage actions? Find out the English way.

Voicing - Theory and Practice — Leonardo Duricic — *Schimmel*

Understanding the laws underlying the behavior of hammer-felt and the displacement of tension within it, will enable us to assess any material we may be confronted with when changing and/or (re) voicing hammers.

Voicing the Kawai Grands — Ray Chandler — *Kawai*

Practical procedural demonstrations will focus on maximizing the piano's tonal potential. Limited hands-on participation will include hammer filing/shaping and needling. A discussion on dealing with divergent artistic and individual needs and expectations will follow.

Voicing the Renner Hammer — Rick Baldassin — *Renner, USA*

A fascinating look at the making and voicing of a quality hammer. You will see Renner's hammer making process from beginning to end, including important design considerations, selecting the molding wood, cutting and shaping the felt, and pressing the hammers. Rick will use illustrations and slides taken on his recent trip to Renner's factories. In addition, Rick will demonstrate how to voice these hammers to produce a desirable musical tone, including some European voicing techniques which he observed.

What Makes It Sound Like That? — Del Fandrich — *Portland, OR, Chapter*

What do *"features"* sound like? Every piano manufacturer sells *features*. In this class we'll try to find out what *features* sound like. Bring your questions.

When Steinway Meets Chainsaw — Tom McNeil — *Buffalo, NY, Chapter*

This is a 1 1/2-hour demonstration/lecture on the problems associated with removing and replacing pinblocks in Steinway grand pianos. The dramatic solution suggested in this presentation eliminates most of the excuses for not replacing these pinblocks. The technique also applies to Mason & Hamlin grands and rare others with similarly unified pinblock/stretcher/rim construction.

Why in the World Did They Do That? — Del Fandrich — *Portland, OR, Chapter*

Sometimes some of the things that a manufacturer does seem a little silly but are really good ideas, and sometimes traditional concepts seem to be good but may have outlived their usefulness. We'll look at some of each. Bring your examples and questions.

1991 Mini-Technicals

Mini-Technicals

Half-hour Mini-Technicals will run at various times during the 1991 Technical Institute. They will feature well-known instructors discussing specific, highly focused topics. They offer the most possible information in the least amount of time. All Mini-Technicals will be held in Franklin 1.

A Concise Resume Of Voicing — Charles Huether — *New Jersey, NJ Chapter*

A concise resume of voicing techniques. The differences and similarities.

A New Approach To Hammer Shaping — Ruth McCall — *Pomona Valley, CA Chapter*

Demonstration of hammer shaping using the McCall mini-belt sander for speed and accuracy.

An Alternative To Knuckle Bolstering — Vincent Mrykalo — *Memphis, TN Chapter*

Showing a method of renewing the shape of the knuckle that normally would be bolstered. Also to restore a cylindrical shape to the knuckle without enlarging it.

Butt Springs - "B" to "T " — Judith Palmer — *Southeastern Pennsylvania, PA Chapter*

Step-by-step procedures for replacing a set of butt springs. Also tips for spot repairs of broken butt springs.

Effective Multi-Ply Pinblock Procedures — Kent Webb — *Baldwin*

This class is formatted to help technicians overcome the unique characteristics of multi-ply pinblocks when stringing or tuning.

False Beats — Marvin Cornwall — *Twin Cities, MN Chapter*

Description of false beats, their cause and how to eliminate them.

Finding The Way To Treble Sound — Willis Snyder — *Reading-Lancaster, PA Chapter*

Procedure for accommodating existing geometry, piano plate irregularities and parts, resulting in optimum tone production.

Glassing-In Pin Blocks — Bill Balamut — *Twin Cities, MN Chapter*

Procedures to install pin blocks with polyester filler.

How A Piano Goes Out Of Tune — Victor Benvenuto — *Southeastern Pennsylvania, PA Chapter*

Understanding this subject will allow you to produce a more stable tuning.

In Home Player Problems — Dan Gates — *Reading-Lancaster, PA Chapter*

The most common player problems, quick tip trouble shooting and solving the problem.

Name That Noise — Sid Stone — *Golden Gate, CA Chapter*

20 different piano noises you may encounter while tuning. You will identify the noises and be graded.

Piano Widgets — Mark Ritchie — *Columbus, OH Chapter*

Slide presentation with some show and tell dealing with home-made tools and shop fixtures.

Preparing the Grand Action For Regulation — Wim Blees — *St. Louis, MO Chapter*

Steps to take prior to regulating that will make regulating an older action easier.

Professional Ethics, Credibility And Image — Jack Wyatt — *Dallas, TX Chapter*

As the status of our profession grows, so should our image. This can be accomplished by improving our credibility.

Repetition Springs - Their Strengths And Weaknesses — Keith Bowman — *South Central Pennsylvania, PA Chapter*

Tools and procedures necessary to regulate spring tension, reconditioning of springs and slots, relationship of repetition spring tension to overall action function.

String-Splicing Techniques — Yat-Lam Hong — *Western Michigan, MI Chapter*

Reasons for splicing, tools required and techniques for splicing broken treble and bass strings.

Termites In Pianos — Ben Kuraya — *Hawaii, HI Chapter*

Do you know what happens when termites invade a piano action, keyboard or piano case? Do you know the tell-tale signs of termites?

The Eclectic Tool Kit — Leavitt Keener — *Reading-Lancaster, PA Chapter*

A state of the art equipped and organized tool kit for the serious technician.

The G-A-K-F Keys — Bob Hundley — *Detroit-Windsor, MI Chapter*

Preparing the grand action keyframe by cleaning, tightening, sanding and refelting keys.

Time Is Money — Colette Collier — *Washington, D. C. Chapter*

In the final analysis, unless you do a lot of relating, all you have to sell is your time. How do you put a value on your time? This class will examine the technician as both employee and employer of his/her own business.

Tuning The Victorian Temperament — Owen Jorgensen — *Lansing, MI Chapter*

Instructions on how to tune the "Victorian Temperament" that was erroneously called equal temperament during the 19th century.

Upright Pedal Trouble Shooting And Repair — Ed Pettengill — *Southern Tier, NY Chapter*

Trouble shooting uprights from skidboard to pedal board including lubrication and repair.

Voicing Verticals — Gary Nelms — *Erie, PA Chapter*

Explanation and demonstration of methods of working with vertical hammers.

Your Career In Sales — Earl Orcutt — *Pocono Northeast, PA Chapter*

From the moment you enter the business world you are a salesperson. This class will show how to apply basic sales techniques, whether you actually sell pianos, accessories, or just yourself.

CONVENTION

Philadelphia Attractions

Local Attractions

You will find a lot happening during convention week without even setting foot from the comfortable Adam's Mark Hotel. In addition to the indoor-outdoor swimming pool, the sauna, Nautilis equipment, aerobics and racquetball, the hotel offers a sports bar, a high-energy dance lounge, live classical and show-tune piano music at the Marker restaurant, and two separate shows of jazz nightly at Pierre's Lounge.

Beyond the hotel, you can find a great variety of intrigue and entertainment for the whole family throughout the area. Here are highlights of specific events that will be in progress during mid-July at some of our 26 theaters, 16 dance companies, major sports organizations, 12 choral groups, several orchestras, and the Philadelphia Department of Recreation.

Many groups gear up just for the summer months. For example, the Mann Music Center, an open-air amphitheater in Fairmount Park, hosts a steady stream of top-flight performers. this year during convention week, the Mann presents Kathleen Battle, beautiful lyric soprano, in concert one night, and the Choral Society of Montreal performing "Carmina Burana" on another. The Hedgerow Theater will be presenting three one-act plays: Eugene O'Neill's "Before Breakfast," Susan Glaspell's "Trifles," and Louie Lippa's "Prison Break." This year's annual production by Shakespeare in the Park will be "Romeo and Juliet."

Members of the Convention Committee of your host chapter for this year's international convention are from back row left: David Charrier, Fred Raudenbush (Committee Chair), Martha Kelly, Webb Phillips. Front row from left: Alan Helzner, Barri Hartman, Ruth Brown (Host Chair), Judith Palmer.

The kids will have two different productions of "The Wizard of Oz" to choose from, including one being performed at Philadelphia's scenic waterfront, Penn's Landing. This interesting and relaxing area is the home of the Port of History Museum, as well as housing several large ships which are open for exploration. On many afternoons and evenings throughout the summer, you will find the open-air stage at Penn's Landing bustling with activity in preparation for concerts by well-known entertainers... all free to the public.

Longwood Gardens, a 350-acre garden of extraordinary splendor is a must-see, especially on those evenings when concerts or theater productions are followed by the fountain displays. The week you are here, the fountain displays share the night sky with fireworks. Other special events that week are the Hispanic Fiesta Festival at Penn's Landing, and Bastille Day celebrations at some of our renowned French restaurants.

If you can bring the children with you, plan to stay around for a while before or after the convention to better take advantage of our many museums and historic sights. My younger child's favorites are the Please Touch Museum and Smith Memorial Playgrounds and Playhouse. The playground was built for the children of Philadelphia in 1899 by Richard Smith and, according to my son's rave review, it stands the test of time for being a "very fun place." Older children will enjoy the Franklin Institute, the Natural History Museum, a stroll down South Street, Dorney Park, and white-water rafting down the Lehigh River.

The Phillies will be in full swing during convention week, playing either San Francisco or Los Angeles each day, including day and evening games. Area racetracks await you, as do professional cricket games. You can also catch a canoeing marathon and a sculling regatta just minutes away from the Adam's Mark, on the Schuylkill River, which winds through Fairmount Park, the largest metropolitan park in the country. If this should be the first time you experience the grace and speed of a sleek scull skimming across the water, you'll be glad you made the effort.

Knowing how difficult it can be to make choices and determine how to get around to events and special attractions in unfamiliar surroundings, we in the Southeastern Pennsylvania Chapter, as your hosts, are planning to have all the information you will need at our booth. Your only problem may be, how to choose from so many choices!

Judith Palmer, SEPA Chapter

Churches And Museums

As a resident of southeastern Pennsylvania since 1942, I have had many opportunities to see first-hand the numerous museums and churches that comprise the historical and cultural enrichment of this area.

Just a glance into the Yellow Pages directories for Philadelphia, Montgomery, Bucks and Delaware Counties, and you'll see thousands of churches and over 100 museums. I might mention that adjacent to many of the churches are cemeteries that are the final resting places for Ben Franklin, Betsy Ross, and Commodore Barry, and many others that played major roles in the formation of our country.

Besides the sheer beauty of the sanctuaries with their stained glass windows and magnificent woodworkings, there are also pipe organs and occasionally a rare concert grand piano. How many of us get to see a Bluthner Grand?

Over the past 16 years, I've tuned in hundreds of these churches, and to this day cannot stop marveling at these great houses of worship of all denominations.

Just to mention a few of the museums; there's the Philadelphia Museum of Art, Academy of Natural Sciences, Brandywine River Museum, Chester County Historical Museum, National Wax Museum, Norman Rockwell Museum, Pennsylvania Academy of Fine Arts, Please Touch Museum, etc., etc. The list goes on and on! Let us not forget the Philadelphia Zoo, Academy of Music, and the Locust, Forrest, and Walnut theaters.

If you have the time and desire to visit any of our churches or museums, you might consult with the host chapter as to their locations.

While you're here, take advantage of our history and culture. Enrich yourselves as I have for many years, and most of all — have fun!

Alan Helzner, SEPA Chapter

Atlantic City Trip

Your host chapter (SEPA) has big entertainment for all you early birds (spouses and early arrivals). It's a trip to Atlantic City! We'll leave the Adam's Mark Hotel at 8:00 a.m. Saturday July 13, 1991, and return later at 4:00 p.m., in time to enjoy dinner and the Opening Assembly.

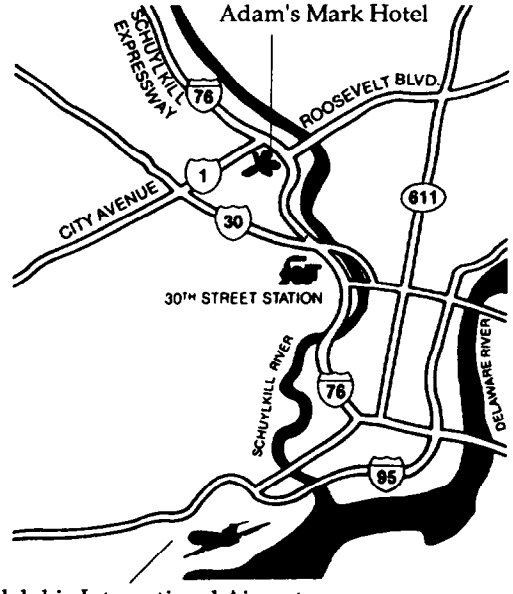
Visit Donald Trump's world-famous Taj Mahal, or take a walk on the Boardwalk and Park Place. The cost of the trip is minimal — only $28.00. You get $7- $28 back in tokens and complimentary tickets.

Deadline to sign up is June 15. Call early and book your reservations — limited seating (50 people). Do not delay — call right away! Contact: Fred and Marilyn Raudenbush; 20 N. Laurel Street; Millville, NJ 08332 (609) 825-2857.

How To Get To The Adam's Mark Philadelphia...

Coming on the New Jersey Turnpike, take Exit 6 (Pennsylvania Turnpike). Go west approximately 30 miles and take Exit 24 (King of Prussia/Valley Forge). After going through the tool booth you will be on I-76 East (Schuylkill Expressway) heading toward Philadelphia. Continue on I-76 to the City Avenue (Route 1 South) exit. Take this exit and turn left at the second stop light. The hotel will be on the left.

Coming from Philadelphia International Airport, take Highway 291 East to I-76 West. Continue on I-76 to the City Avenue (Route 1 South) exit. Take this exit and turn left at the second stop light. The hotel will be on the left.



1991 Technical Institute Class Schedule

	1st period	2nd period	3rd period	4th period
Sunday-Tuesday	8:00-9:30	10:30-12:00	1:30-3:00	4:00-5:30
Wednesday	8:00-9:30	10:00-11:30	◯ 1 period class	⬭ 2 or more period class

	SUNDAY				MONDAY				TUESDAY				WED.		
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	
300 Special Aids For The Visually Impaired - Hal Bleakley								◯							Gettysburg 4
88-Note Stretch Tunings Easy As FAC - Albert Sanderson (Inventronics)				◯								◯			Gettysburg 1
Accurate Grand Hammer Installation - Dave Snyder	◯											◯		◯	Grand Ballroom F
Action Centers - The Secret Of Consistent Touch - Don Mannino (Young Chang)	◯													◯	Const. Ballroom B
Administering The PTG Technical Exam - Bill Spurlock					◯										Jefferson
Aftertouch - The Secret To Happy Pianists - Kevin Leary				◯										◯	Franklin 2
Amazing Wood Behavior - Webb Phillips (Webb Phillips and Associates)				◯						◯					Gettysburg 2-3
Analyzing Soundboards Old And New - Chris Robinson							⬭		⬭						Grand Ballroom B
Basic Tuning For Everyone - Jim Coleman, Sr.					◯						◯		◯		Franklin 2
Bechstein - History And Future Told By Technician/Owner - Karl Schulze (C. Bechstein)	◯										◯				Franklin 1
Bridge Repair And Recapping - Nick Gravagne	⬭										⬭		⬭		Jefferson
College And University Technicians' Seminar - Tom McNeil							⬭								Const. Ballroom A
Concert Ready Voicing - Ari Isaac (A. Isaac Pianos)	◯						◯							◯	Gettysburg 2-3
Disklavier - The Future Of The Piano - Bill Brandom, Dean Garten (Yamaha)			◯									◯			Franklin 2
Expand Your Tuning Business Through Humidity Control - S. Smith (Dampp-Chaser)			◯								◯				Grand Ballroom F
From Keyboard To Disk Drive - Ron Berry					◯						◯				Gettysburg 2-3
Gadgets And Gimmicks Galore - Ralph Stilwell			◯		◯							◯			Delaware 3
Getting To The Bottom Of It - Rick Baldassin					◯							◯			Const. Ballroom B
Grand Dampers - Installation, Regulation And Troubleshooting - Green, Jones (Steinway)			◯					◯		◯					Delaware 4
Grand Hammer Installation - Factory Style - Priscilla Rappaport, Joel Rappaport	⬭												⬭		Grand Ballroom B
Hammer Tone Regulation - Wally Brooks (Brooks, Ltd.)											⬭				Grand Ballroom A
House Calls - Be Equipped - Isaac Sadigursky		◯			◯							◯			Franklin 1
Keys To Where The Action Is - Jamie Marks (Baldwin)		◯			◯									◯	Delaware 4
Learn To Speak Piano - Ray Chandler (Kawai)	◯										◯				Delaware 3
Mastering Friction: The Balance Weight System - David Stanwood (Stanwood and Co.)		◯							◯						Grand Ballroom E
Mini Technicals (see Mini-Technical schedule on next page)			◯	◯			◯	◯	◯	◯			◯	◯	Franklin 1
Pianos Without Sheep? - David Stanwood (Stanwood and Co.)					◯									◯	Grand Ballroom E
Pinblock Installation - Andre Bolduc	◯							◯					◯		Grand Ballroom A
Practical Appraisal And Evaluation - Bob Russell		◯							◯						Gettysburg 2-3
Preparing For The PTG Technical Exam - Bill Spurlock	⬭														Franklin 2
Preparing For The PTG Tuning Exam - Mike Carraher	◯														Grand Ballroom E
Professional Burning In And Touch Up - Webb Phillips (Webb Phillips and Associates)							◯							◯	Gettysburg 2-3
Refining The Performance Piano - A Technical Approach - Yamaha Team (Yamaha)	⬭										⬭				Const. Ballroom A
Reliable Grand Regulating By Checklist - Danny Boone				◯						◯					Delaware 4
Restringing And Repinning The Painless Way - John Zeiner			◯									◯	◯		Grand Ballroom E
Resurfacing Vertical Piano Hammers - Joe Garrett	◯										◯		◯		Delaware 4
Secrets Of The Superglues - Ed Dryburgh (Dryburgh Adhesives)			◯										◯		Const. Ballroom B
Servicing The Service Business - Janet Leary							◯					◯			Delaware 4
Shop Procedures For Fun And Profit - Jim Harvey	◯						◯			◯					Gettysburg 1
So You Want To Be A Concert Technician? - Norman Neblett				◯							◯				Const. Ballroom B
Spielart - How To Determine Tone And Touch Qualtiy - Ed McMorrow			⬭						⬭						Grand Ballroom A
Temperaments Of The Masters - Randy Potter (Randy Potter School)					◯						◯				Gettysburg 1
The Alexander Technique For Piano Technicians - Wade Alexander		◯						◯							Gettysburg 1
The False Beat Stops Here - Susan Graham				◯						◯			◯		Const. Ballroom A
The Fandrich Upright Action - A Grand Action For The Upright Piano - Fandrich, Trivelas										◯			◯		Delaware 3
The Future Of Piano Service Is Now - Marshall Hawkins			◯						◯						Gettysburg 1
The Impossible Tuning - Virgil Smith		◯						◯						◯	Delaware 3
The Perfect Tuning - Steve Fairchild							⬭		⬭						Franklin 2
The Ups And Downs Of Keys - Lonnie Young (Wurlitzer)		◯			◯								◯		Grand Ballroom F
Tone Building The Hammer - Wally Brooks (Brooks, Ltd)							◯								Grand Ballroom A
Tone Building The Piano - Wally Brooks (Brooks, Ltd)		◯													Grand Ballroom A

	SUNDAY				MONDAY				TUESDAY				WED.		
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	
Upright Regulation From Design To Installation - Weisensteiner, Light (Kimball)															Grand Ballroom F
Vertical Regulation The English Way - Ralph Long															Grand Ballroom E
Voicing The Kawai Grands - Ray Chandler (Kawai)															Delaware 3
Voicing The Renner Hammer - Rick Baldassin (Renner, USA)															Const. Ballroom B
Voicing - Theory And Practice - Leonardo Duricic (Schimmell)															Jefferson
What Makes It Sound Like That? - Del Fandrich															Grand Ballroom B
When Steinway Meets Chainsaw - Tom McNeil															Const. Ballroom A
Why In The World Did They Do That? - Del Fandrich															Grand Ballroom B
Visually Impaired Drop-In Center															Gettysburg 4

Mini-Technicals

Half-hour Mini-Technicals will run at various times during the 1991 Technical Institute. They will feature well-known instructors discussing specific, highly focused topics. They offer the most possible information in the least amount of time. All Miini Technicals will be held in Franklin 1.

	1st technical	2nd technical	3rd technical	4th technical	5th technical	6th technical
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Tuesday	8:00-8:30	8:30-9:00	9:00-9:30	10:30-11:00	11:00-11:30	11:30-12:00
Wednesday	8:00-8:30	8:30-9:00	9:00-9:30	10:00-10:30	10:30-11:00	11:00-11:30

	SUNDAY						MONDAY						TUESDAY					
	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
A Concise Resume To Voicing - Charles Huether - New Jersey, NJ Chapter																		
A New Approach to Hammer Shaping - Ruth McCall - Pomona Valley, CA Chapter																		
An Alternative to Knuckle Bolstering - Vincent Mrykalo - Memphis, TN Chapter																		
Butt Springs - "B" to "T " - Judith Palmer - Southeastern Pennsylvania, PA Chapter																		
Effective Multi-Ply Pinblock Procedures - Kent Webb - Baldwin																		
False Beats - Marvin Cornwall - Twin Cities, MN Chapter																		
Finding the Way to Treble Sound - Willis Snyder - Reading-Lancaster, PA Chapter																		
Glassing-In Pin Blocks - Bill Balamut - Twin Cities, MN Chapter																		
How a Piano Goes Out of Tune - Victor Benvenuto - Southeastern Pennsylvania Chapter																		
In Home Player Problems - Dan Gates - Reading-Lancaster, PA Chapter																		
Preparing the Grand Action for Regulation - Wim Blees - St. Louis, MO Chapter																		
Repetition Springs - Their Strengths and Weaknesses - Keith Bowman - SC PA Chapter																		
String-Splicing Techniques - Yat-Lam Hong - Western Michigan Chapter																		
The Eclectic Tool Kit - Leavitt Keener - Reading-Lancaster, PA Chapter																		
The G-A-K-F Keys - Bob Hundley - Detroit-Windsor, MI Chapter																		
Tuning the Victorian Temperament - Owen Jorgensen - Lansing, MI Chapter																		
Upright Pedal Trouble Shooting and Repair - Ed Pettengill - Southern Tier, NY Chapter																		
Voicing Verticals - Gary Nelms - Erie, PA Chapter																		

	WEDNESDAY					
	1	2	3	4	5	6
Name That Noise - Sid Stone - Golden Gate, CA Chapter						
Piano Widgets - Mark Ritchie - Columbus, OH Chapter						
Professional Ethics, Credibility and Image - Jack Wyatt - Dallas, TX Chapter						
Termites in Pianos - Ben Kuraya - Hawaii, HI Chapter						
Time is Money - Colette Collier - Washington, D. C. Chapter						
Your Career in Sales - Earl Orcutt - Pocono Northeast, PA Chapter						

INDUSTRY NEWS

Steinway Musical Properties, Inc. And Kawai Musical Instruments Mfg. Co., Ltd., Announce Agreement To Distribute New Line Of Mid-Priced Pianos

Kawai Musical Instrument Mfg. Co., Ltd., (Kawai) and Steinway Musical Properties, Inc. (SMP) announced March 19 that they have reached an agreement by which a newly-formed division of SMP will distribute a new line of mid-priced pianos, designed by Steinway & Sons and manufactured by Kawai. The new line will be available in early 1992.

Bruce Stevens, president of SMP and Steinway & Sons, said, "SMP has for some time been concerned with the difficulty experienced by some of our dealers both in this country and abroad to obtain suitable mid-priced instruments for sale in their Steinway dealerships. We explored many avenues in an attempt to assist these dealers, and have concluded that it is necessary for SMP to take a hand directly. Accordingly, we have taken this step to ensure that Steinway dealers throughout the world will have available an excellent quality mid-priced piano for sale to those customers who are not yet ready to acquire a Steinway."

Stevens continued, "The introduction of this new line is essentially a distribution strategy which will enable the world-wide Steinway dealer organization to offer an exceptional quality mid-priced piano to their customers. The marketing objectives will be designed to complement the overall plans of selling Steinway & Sons pianos by its dealers. The initial distribution of these instruments will be very limited and will only be expanded as we become comfortable with the market needs. Since Steinway has designed these instruments in collaboration with Kawai's manufacturing engineers, we believe that these pianos will set a new standard in their category. We chose Kawai as the manufacturer because we believe Kawai to be the most capable, having a track record in producing instruments in this price range. We look forward to a long and mutually beneficial relationship."

Hirotaka Kawai, president of Kawai, joined Stevens in praise of the new agreement, saying that "Steinway's unparalleled reputation and production know-how combined with Kawai's sophisticated production technology will do much to increase world markets for both companies."

Although the name of the new piano line has not yet been released, spokespersons said that it will not carry either the Steinway or Kawai names.

Steinway Musical Properties, formed in 1985, is a parent holding company of Gemeinhardt Co., Inc., manufacturer of flutes; Wm. Lewis & Sons, makers of violins, cellos and other string instruments; and Steinway & Sons. Steinway & Sons, founded in 1853, has factories in both Hamburg, Germany, and New York City (its headquarters).

Kawai began operations in 1927 when its founder, who was one of the pioneering engineers of the Japanese piano industry, formed his own company. Kawai recently built a grand piano plant in Ryuyo, Japan, which has been acclaimed in piano manufacturing circles around the world.

"The Calculating Technician" Now Available

"The Calculating Technician" by David Roberts, the initial publication of the Piano Technicians Guild Foundation Press has finally arrived. Based on the original series of articles published in the *Piano Technicians Journal*, articles which attracted more interest than any other series before or since, it was selected to be the first of what is hoped to be a continuing series of books on piano technology and related material. Our *Journal* is and has been loaded with wisdom and information for the many years it has been in publication. This new Press is an attempt to gather this material, as well as new items, into a comprehensive resource library.

Editing a series of articles, written month by month with no thought at the time of forming a book out of the material, was a task whose complexity no one on the project was prepared for. But we met the challenge, and the result, "The Calculating Technician" is now on sale from the Home Office.

Whether or not you ever expect to rescale a piano; whether or not you feel scale design information is necessary to your business as a piano technician; this book and its contents will do much to help you understand the work in which we are involved. Understanding the shortcomings created by necessary scaling compromise; recognizing varieties of options in use through the years, some practical, some working better than others, can only help the technician in coping with and even overcoming problems in tuning and in voicing which these necessary compromises create.

"The Calculating Technician" by David Roberts is a worthwhile addition to everyone's bookshelf of practical information. It is our hope that this will be the beginning of a comprehensive library of piano-related material, a primary source of the best as well as the most practical information on the piano. The Home Office is eagerly awaiting your order.

New Keyboard Product Reference

Ancott Associates is adding a new edition to its publication, the "Music Product Directory." The new "Discontinued Keyboard Product Edition" will be a detailed reference book listing keyboard products that have been discontinued from production and/or U.S. distribution during the past five years. This will compliment Ancott's existing "Piano and Electronic Keyboard Editions," which specifically list product information on current production models. The new book will be available in April.

Ancott's new keyboard reference book will include five basic product categories; acoustic pianos, home organs, portable keyboards, synthesizers, and electronic pianos. Products will be listed by brand name and model number. Each listing will include basic feature information, year discontinued from production, and last wholesale price. The new edition is $25.00 per book and will be updated every other year.

The "Music Product Directory Piano" and "Electronic Keyboard Editions" were first published in 1986. They have provided a comprehensive reference for current domestic and foreign keyboard products being sold in the U.S. Feature

and price information is listed individually by brand name and model number. The books come out twice each year and have become the primary reference for piano technicians, manufacturers, distributors and retailers in the music industry.

The "Computer Edition" of the "Music Product Directory" has been available since 1988. This electronic version of the "Directory" includes both piano and electronic keyboard information. The program will run on any IBM or compatible computer. Ancott indicated that they plan to add the discontinued product data to the "Computer Edition" by the fall of this year.

For more information, write Dan Kobida at Ancott Associates, P.O. Box 46532E, Cincinnati, OH 45246 or call (513) 772-4228.

Miniature Piano Enthusiast Club

The Miniature Piano Enthusiast Club (MPEC) has been founded by a private collector of miniature pianos. The club's purpose is to provide exposure to other miniature piano collectors through correspondence, and to enhance their collection by exchanging data and ideas.

The Miniature Piano Enthusiast Club will provide information on new and unusual pianos and conduct research on the history of miniature pianos. Additionally, there are yearly plans to present awards for the most unique pianos, best-looking collection and oldest pianos; displaying collections in hobby shows and libraries; conducting programs using displays and slide presentations; maintaining a library of greeting cards/postcards depicting the piano; as well as a yearly convention.

Application information can be obtained from the founder Janice E. Kelsh, M.P.E.C., 5815 N. Sheridan Road, Suite 202, Chicago, IL 60660 or by phoning (312) 271-2970.

Stating The Facts: Alfred Knight Ltd.

To The Journal:

Some American dealers appear to be misinformed about the current situation of Alfred Knight Ltd., and the opportunity is taken to state the facts.

Last fall Alfie Knight's daughter, Sylvia York, and members of her family closed the factory at Loughton, when Alfred Knight Ltd. was acquired by The Bentley Piano Co. Ltd. Bentley is based at Woodchester, 100 miles west of London, in the Royal Cotswolds, and production of Knight piano has been transferred to Woodchester. A new building has just been completed and Knight production is now underway. Knight's original model designs, jigs and presses are in use, to ensure that the existing Knight range is manufactured using the traditional Knight methods of production, so that the quality expected by Knight buyers throughout the world is maintained. To help uphold these traditional high standards, members of the York family and selected operatives formerly employed in the production at the Loughton factory are providing assistance and expertise.

Future production will concentrate on the K10 Slimline, School and Round Shouldered models, and the London and New York models. Thus continuity exists in all respects.

Information concerning Knight pianos may be obtained from Phil Warfield, Warfield Piano Service, 821 Kent Avenue, Catonsville, MD 21228, telephone (301) 747-7700 or Alfred Knight Ltd., Selsley Road, North Woodchester, Stroud, Glos, England, telephone 44 453 873243.

Alfred Knight Ltd. was founded in 1936 by the late Alfred Knight, affectionately know as "Alfie." He built up a world-wide reputation for his top quality pianos of distinctive design, a reputation which continues to be upheld today. The Knight piano is a vertical piano with the tone of a grand piano, and its special features have been much appreciated by piano specialists and music teachers. Pianos have been supplied to numerous famous Americans in the music and show business worlds.

The Bentley Piano Co. Ltd., was founded in 1906 by Douglas Grover, grandfather of David Grover, the current President. Douglas' father and grandfather made pianos back to the 1830s, and so Bentley enjoys a 160-year-old heritage. Today one third of output is exported to 25 countries yearly, a worldwide export business built up in the last 45 years by the late Richard Grover, father of David. The company is family-owned and craft-based, the employees being highly-skilled in a number of different crafts, and the majority being with the company for many years. David Grover worked in German factories and also completed the Master Piano Makers course in Germany. Thus the Bentley team is ideally placed to carry on building the high-quality instruments it is renowned for, and to provide the continuity which Alfred Knight Ltd. requires. David Grover himself has just traveled across America, when he was able to meet a number of important Knight customers.

D.S. Grover, Chairman and Managing Director, Alfred Knight Ltd.

Index Of Display Advertising

TECHNICAL FORUM

Gluing On Damper Felt

Susan Graham, RTT
Technical Editor

We've cut new felt and trimmed corners or points as needed, refinished the heads, cleaned wires, refinished and rebushed the guide rail and serviced the underlever tray.

If the contact between the back of the key and the underlever is even, regulation is much easier. In some systems there is dense felt on the end of the key. In others, this felt is on the underlever itself.

Keyend felt can be replaced quickly with the keys in a keyclamp. Arrange them so they are snugly pressed together at the back: this will result in groups of 10 or so keys (due to flare). Cut the felt into long strips to cover each group and glue it in place. Slice it apart by running a thin, sharp blade between the keys. (See December 1987 *Journal* for a more complete description.) Individual underlever blocks must be pre-cut and should be applied before the system is reinstalled.

Double check new guide rail bushings for tightness and then reinstall the rails. If the bushings were sized with bridge pins, they may be correct (especially if they were wet with alcohol and allowed to dry with the pins in place). There can be some "rebound" of the cloth, however. If time permits, remove the bridge pins and let the guide rails stand overnight before reinstallation. Then iron the bushings if they need it before the rail is positioned under the strings.

As explained in the February *Journal*, I like the ironing technique developed by Bruce Clark to size guide rail bushings. A bit is made from a 2 1/2" length of 3/16" threaded brass rod, turned down at the end to form a 1/2" nipple slightly larger than a damper wire. This is screwed into a 25-watt soldering iron. An alternative is to chuck a piece of wire also slightly larger than a damper wire (such as a spinet sticker wire) into a mototool: the rotation provides the heat. Heat is necessary for a permanent dimensional change in wool felt or cloth. Don't overdo easing, however: the wire should slide freely but have a minimum of sideplay (about the same as a newly-bushed key). A few seconds contact with the heat is all that is necessary.

Center the guide rail holes between the strings. As you tighten the screws, make sure that the rail doesn't ride up but remains in solid contact with the soundboard. Tightening the screws may pull the rail sideways out of alignment. Watch for this particularly if the plate has been removed and the alignment of everything may be floating a little. Hold the rail in place either manually or by inserting a wedge against a handy plate strut. In regulating and troubleshooting watch for an entire section of damper heads leaning in one direction. This may indicate that either the guide rail or the underlever tray is slightly misaligned to one side.

Reinstall the underlever tray (back action). Put in the return spring so the tray is pressed down and not riding up and lifting the heads as you glue on the felt. Regulation procedures require an operative right pedal, so install the pitman and other parts of the linkage now.

Now install the upstop rail. At least once in your career as a damper setter you will get a system nicely installed, regulated and working perfectly, reach to set the upstop rail height... and find the rail not there, with a forest of perfectly-regulated damper wires now in the way. I, of course, have never done this. Only through conversing with fellow technicians do I know that sawing the guide rail into sections is *not* the proper remedy. In most cases, removing the end block and guide rail screws will create enough leeway so the entire system can be pulled forward and away from the belly rail. Then the upstop can be maneuvered in *under* the tray, behind it, up over the back of the underlevers and into place.

It is a far better idea to install the rail now. Raise it to its highest position and tighten down a screw or two to hold it up out of the way.

Most, if not all, of our work on dampers is as rebuilders. We rarely start from scratch with a completely new system. Alignment of heads to strings is usually close, so it is reasonable to glue up the felt as the heads are reinstalled, letting the weight of the underlever hold the felt in place and start the settling process immediately.

Hide glue is the adhesive of choice, since it is both quick-setting and reversable. I do slow down the cure with a pinch of urea, however; any damper gluing will involve a slight amount of fuss with alignment and those extra few seconds can make a big difference. Your workplace should be warm: direct a strong incandescent lamp on the damper heads as they sit in the rack waiting to be installed and this will make the glue even easier to handle.

Have the glue ready and sitting in its pot on the keybed (watch that the steam doesn't damage finish on the stretcher), the felt all cut and trimmed and everything in place. Glue on the fingers is inevitable, so avoid handling the heads, wires or felt any more than necessary. A small mirror standing on the strings behind the heads facilitates alignment of the back block as well as the front. In addition, every five or six dampers I'll walk around to the back side and sight along the line of felt and heads, making sure that alignment is exact. Nothing screams "rebuilt" as quickly as a ragged line of damper felts.

Even if they're good enough to be functional, the appearance still detracts from the job.

Glue is customarily applied to the heads, since a wooden surface won't absorb it as quickly as does felt. If heads are backed with felt or cloth, extra glue must be used.

Watch several things. Center the felt on the head from side to side, and get the alignment correct front and back. Run your fingers gently along the glue line to iron down stray fibers. If there are matching wedges front and back, remember the indicator lines which you drew on the felt strip before cutting so you can keep the same leg of the wedge on the same side of the head.

Be absolutely sure that the sides of the felt blocks are parallel to the sides of the heads. If there is some overlap, it should be equal and even on both sides. Many technicians can line up flat-only or wedge-only dampers but have problems with combinations: the trichord felt lines up, but the flat is skewed or misaligned. Flats are a little more forgiving but still must seat solidly on all three strings: preoccupation with the trichord may cause neglect of flat alignment.

As the individual damper is glued, put it in the piano and drop the wire into the top flange. Lift the underlever slightly and finger-tighten the set screw. This holds the head in place, and starts settling the new felt with the weight of the underlever. If tightening the screw causes misalignment of the head, straighten it immediately by hand. It will be easy to see in the flats, since the head will turn. Wedge damper felt and the already-setting glue may hold the heads and give a false reading while straining the glue or felt. The temptation is to lift by the underlever to check. Don't: this pulls the felt off the heads. (The string pinches wedge felt enough to grab at it.) Instead, pluck the individual strings to see if the damper is evenly seated. On most dampers if the strings are not evenly damped the felt is off to one side or the other. Trichords can fool you, however: uneven damping may be the result of a too-shallow cut in the middle of the felt, or a slight mismatch of flat and trichord. Side-to-side misalignment should be corrected by sliding the felt over, but the other things can be left for later troubleshooting. A pair of tweezers can be handy for sliding felt side to side without removing the head again.

Did I mention that the strings should be properly spaced and levelled before damper gluing is begun?!?

Felt alignment can be fudged — so it isn't perfectly centered under the head, but is exactly over all three strings — only *slightly*. The more felt is out from under the weight of the head, the less efficient the damper will be. It looks bad and will get worse over time, as the felt tends to curl up or distort. Stop gluing and bend wires if head spacing is really the problem.

Some technicians like to put a caul under the underlevers while gluing, setting it so an even (although preliminary) lift is established (usually by measuring the height of an underlever before disassembling the system). If you do, remove the caul after tightening the screws so weight is hanging from the felt, and doublecheck alignment visually and aurally.

Not to drive the subject into the ground, but care in gluing is imperative for both function and appearance. Take the time necessary to get the damper felt lined up with itself and the strings, and visually pleasing from all directions. If, for instance, one end of a cut block is slightly concave and the other slightly convex, turn all the blocks so the same end is visible on all the dampers. This way, the edge of the felt is aligned completely, from the string up to the head.

Don't let damper felt sit for long in an incorrect position. This is soft, unpressed felt and the loose layers distort easily. It "remembers" an incorrect setting very quickly and will cause trouble for the rest of its life (not to mention yours... sort of like children).

Take a good long break after all the felt is glued — you need and deserve it, and the glue must set thoroughly. Regulation will be more stable if settling time is permitted. Some technicians weight down new dampers with boxes of tuning pins. Go ahead — as long as you're sure that the alignment that you're pressing into the felt is what you want.

Unless you are extraordinarily skilled and twice as lucky, damper regulation needs to be done in several passes. As with much piano work, the system must be working somewhat to be made to work better, and must be working well to be perfected. Each successive operation is likely to alter some previous setting, making the path of this job a spiral. The trick is to learn when and where to concentrate as the job progresses.

Start by setting a "lift." This is done by adjusting the height of the underlever, suspended on the wire, so the back of the key contacts and begins to lift it at the desirable point in the key (and hammer) stroke.

Taste in damper lift varies. The acceptable range is contact at 1/3 to 1/2 of the key travel. This doesn't mean one key lifts at 1/2 and the next at 1/3! It means determine the desirable lift within those parameters and adjust all the underlevers to that exact specification.

Lift at 1/3 of key travel enhances a flowing, legato style of play, since it means that the dampers come down fairly late in the keystroke. At the same time, however, having the key pick up the underlever weight early in the stroke tends to make the action feel heavier, since less velocity has been achieved.

Lift at 1/2 the keytravel is more likely to be favored by players of Bach and other "crisp" pieces, who want the control of more immediate damping as the key is released. The tradeoff is that the "bump" of contact between the back of the key and the underlever will be more noticeable. You (and your pianist) should determine the lift you desire.

Then underlevers are set for uniformity. If the keyend felt has been replaced and is level, a caul or gauge can be used to level the underlevers and a uniform lift will result. "Stairstep" some samples and insert the action to determine the setting, or measure the height of the end of the key when it is appropriately depressed, or use one of the available gauges which register keyend felt height at rest. It is advisable to set samples in each section to accommodate slight differences in tray position or keybed level.

Set the underlevers. A supporting caul or gauge makes this a much easier task. If the tray is not warped and the tray felt not worn, it can be blocked up and used as a caul: simply loosen all the set screws so either the underlevers fall onto the tray or the wires slide down into the top flange. Tap gently on the heads and then on the front of the

figure 1a

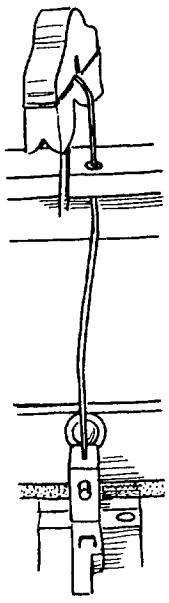
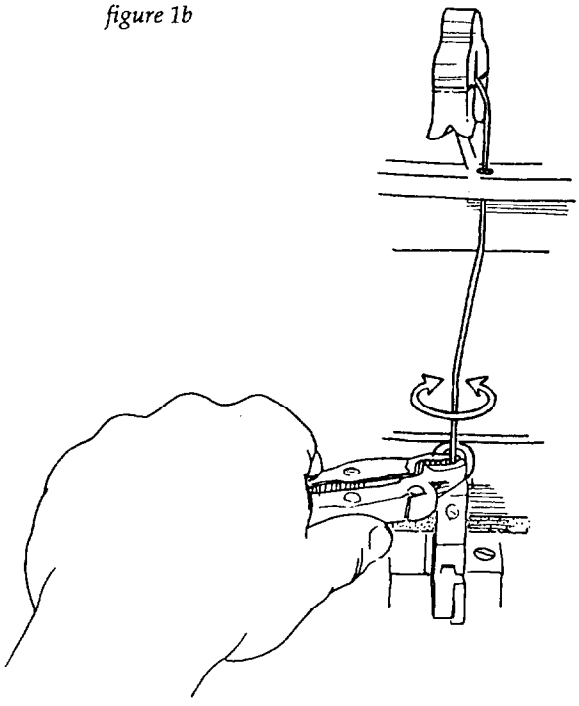


figure 1b



underlever to be sure things are are seated, and "flick" each underlever up on the wire to see if it is traveled correctly (more on this in the wire bending section). Then tighten the set screws. During this first regulation, I tighten them by hand or only very lightly with a screwdriver — final tightening comes later.

If you don't want to use the tray, make a damper caul out of a block of wood standing on four adjustable legs (plain wood screws or capstans). This caul can be almost any length. I use a short one which spans about six underlevers which is as many as my peripheral vision can accommodate. Other technicians use section — or even whole-action length cauls.

Get comfortable. Factories provide damper setters with low-wheeled chairs so they can sit comfortably yet be mobile for their work. I put a couple of two by fours on a four-wheeled piano dolly; auto mechanics, supply outlets have low, wheeled chairs which are worth investigating. Any way you look at it, damper work is physically tiring, so expend a little effort to make it as easy as possible.

The caul I use has a lip on the back so it slides in under the underlevers the same amount each time. I slide it in place, loosen the set screws and let the underlevers rest on the caul. Without standing up, I reach up and give the damper heads a light tap to make sure that the wires are into the top flanges. A tap on the front edge of the underlevers will cause a knock if they are cheating and not really sitting on the block. Tighten the set screws and repeat the checks. Then slide the block out and back in to "wink" any underlevers which drop lower than the rest. I don't worry about what the heads are doing, unless they are getting so badly misaligned that they interfere with each other. Head alignment comes later.

Well, actually, it comes now. The underlevers are set to a uniform height and you stand up and look at the damper heads and they're twisted and crooked all over the place. What to do? I'll describe a sequence which usually works, with two cautions: you may need to fix whatever is worse first, regardless of

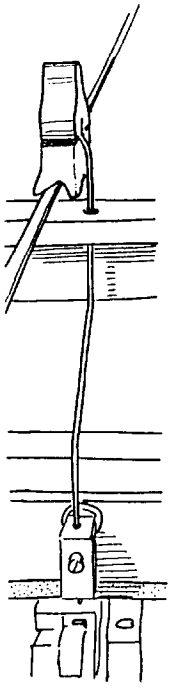


figure 2a

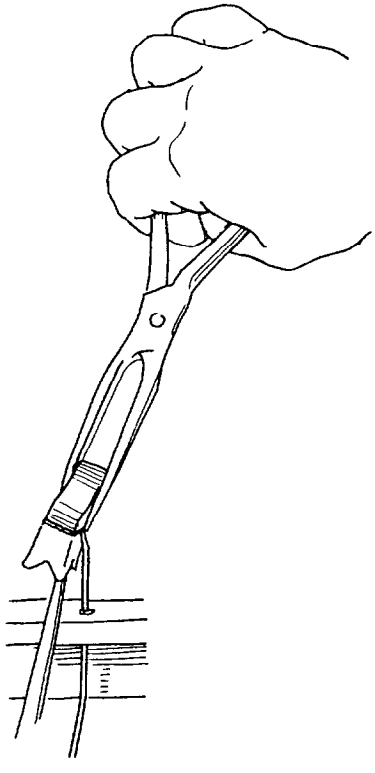


figure 2b

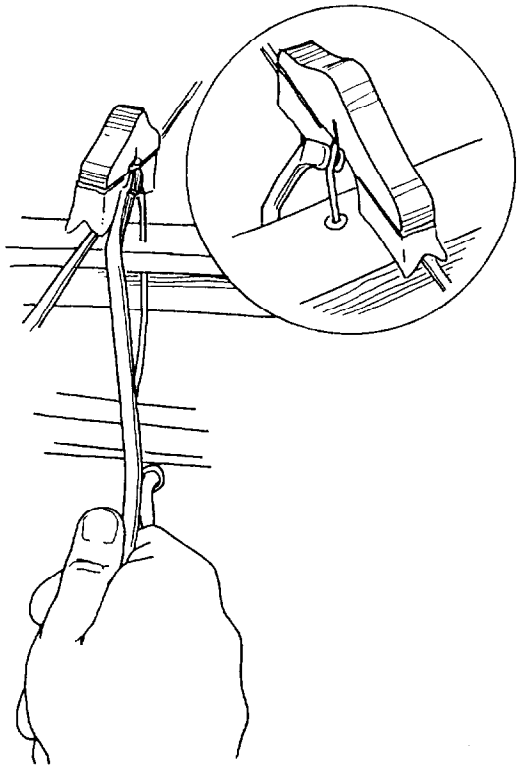


figure 2c

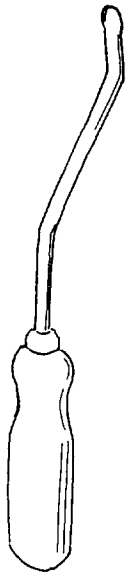


figure 2e

sequence. In addition, remember that successive operations often alter previous ones and, in this first regulation, try not to get too hung up with any one adjustment.

There are two types of damper adjustment: One is static position of the heads at rest. The other is the traveling behavior of the heads as they operate.

Level heads: The first step in regulation is usually a "static" check: scan for heads which are tilted front to back or leaning side to side. Simply press down by hand to bend the wire and level the head front to back. To detect "leaning" dampers, use a square standing on the strings to set samples for reference. Leaning is corrected by grasping the head with a parallel-jawed pliers (hereafter referred to as damper pliers), holding it just over the wire, and bending. As mentioned, if an entire section of dampers appears to lean, it may be due to a misaligned guide rail or underlever tray straining the wires to one side.

Depress the right pedal and watch to see that the heads remain level front-to-back as they lift. If heads appear uneven at rest, but lift evenly, you've made a poor felt match of front and back blocks, and peeling or replacement may be necessary.

Correct twist: Next step is to realign the heads parallel to the strings (hopefully, centered as well, but we'll attend to that later). The secret to doing this is *do not loosen the set screws*. If the set screws are only marginally tight, you may be able to turn the heads by hand. Otherwise, reach in with a pliers and grab the damper wire just above the top flange and turn it so the head is turned in the desired direction. You aren't twisting the wire — you're forcing it against the set screw. If, instead, you think you can loosen the screw, turn the head, tighten the screw and have the head stay aligned — hah! Do it this way. Have I ever broken a top flange or underlever doing this? Never, in 19 years — but if you are working on a very old, brittle damper system, it might be just as well to support the top flange with another pair of pliers.

Correcting twist is easiest in flat dampers, since they skate sideways across the strings and are easy to pick up visually. Wedge dampers are trickier. When they are at rest, the gripping action of wedge felt may make the heads appear to be aligned. As they lift, however, heads will twist. Depress the right pedal very slowly, watching sections of dampers and their alignment to each other and to the strings. The clue is: look for cases where the alignment appears to be correct with the dampers at rest, but as they lift, the front of a head goes one way and the back goes the other (figure 1a). Also watch the spaces between the heads: if the space is even when the heads are at rest, but becomes wider at the front and narrower at the back (or vice versa) as the dampers lift, you have twisting. Correct it at the top flange as directed (figure 1b).

Now we get to the fun part: side-to-side alignment and traveling. We need to align the head so it sits evenly over the string (side to side), and to travel the damper wire so it runs correctly through the guide rail and into the top flange. Once again, the fact that we are rebuilding affects how we work. In factories, these two steps are often done from the bottom up: the wire is traveled through the guide rail and into the top flange and then the "hook" is made to bend the head exactly over the string. In our work, spacing and travel usually are close and we may choose to start by spacing the head to the strings and then adjusting the wire travel accordingly. Always keep in mind two things, however. One is that any of these adjustments is likely to affect the others, and that a problem in one may be disguised by a problem somewhere else. It's common to have several very subtle problems which are difficult to sort out.

Bends in a damper wire are in pairs: two bends at the top near the head for spacing, and two in the wire below the guide rail for travel. Any time you change one bend of a pair, you need to change or at least check the other. Damper wire is quite soft and the bends usually need be very slight: we get in trouble by being too heavy-handed in making these adjustments.

Spacing the head over the string: The head must be centered so felt contact is even on all chords of the unison, and the weight of the underlever and head is evenly distributed. Static spacing can be determined visually, looking at the dampers as they sit on the strings, and at the spaces between the dampers for evenness. The head is moved side to side by changing the bends at the top of the wire, nearest the head. The first bend is right at the head where the wire departs from the mortice. The second bend is usually about 1/8" away: it bends the wire so it is again parallel to the head and drops down through the guide rail. If the head needs to be spaced, the distance between these two bends is changed. I usually change bend #1 first, by grasping the head with the damper pliers and bending the wire so the felt is moved in the desired direction. For instance, in figure 2a, the head needs to move "away" from its own wire, so the wire is first bent so the lower edge of the

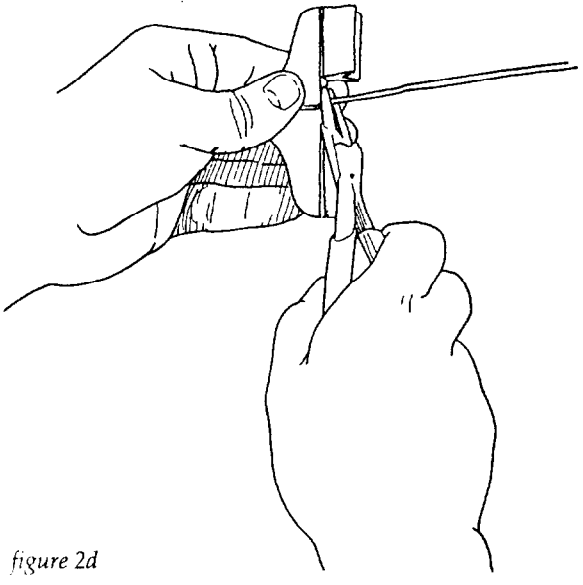


figure 2d

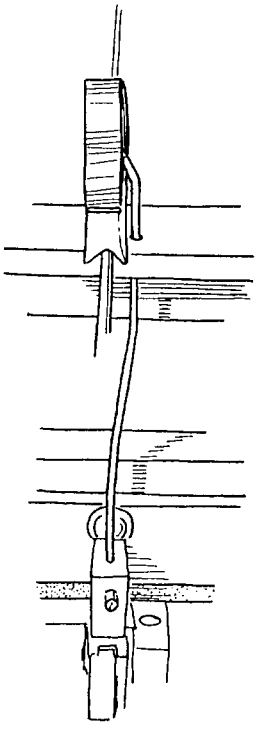


figure 2f

felt block swings over in that direction (figure 2b).

Then bend #2 is corrected to bring the head back square and level to the string. Several tools can be used for this. One is the open-ended wire bender pictured in figure 2c, which has been bent so it will reach up underneath the pinblock, between the strings, and contact the wire. These tools can be homemade or are available from several suppliers, including Steinway and Renner. Another option is to remove the damper from the piano and use a small roundnose pliers to correct the bend (figure 2d): with practice, you can get quite accurate with this method. Sometimes, bend #2 is far enough from the head so the bending pliers can be used.

If the head needs to be moved closer to its own wire, a shortcut is to straddle bend #2 with a pliers (bending or regular) and squeeze to reduce it, and then straighten up the head with the damper pliers. Just remember that these are usually very subtle bends, and that the final result should center the head over the strings and the wire over the guide rail hole (figure 2f).

Travel the wires: The damper wire should not lean as it passes through the guide rail, and should not strain the underlever to either side (figure 3a). Look first just below the guide rail and travel the wire so it rises vertically through the hole. This is done at bend #3 (figure 3b) using bending pliers. If you put tape on one handle of these pliers, you'll have a tactile as well as visual reminder of which way the pliers will work.

Since the wire segment should drop straight down through the hole, it stands to reason that this bend should be directly under the guide rail bushing. The angle of the bend is such that the upper segment of the wire travels straight through the rail and the lower segment swings over far enough toward the underlever. Until bend #4 is corrected, however, bend #3 may appear to be overdone (figure 3c).

Bend #4 travels the wire into the top flange (figure 3d). This bend, too, should be directly in line with the hole it goes through. The test for this bend is to loosen the set screw and flick the underlever up so it rides up the wire and falls back down freely. If the top flange binds, then the wire is straining the underlever and damage or sluggishness can result.

The test for these bends together is that if the heads are evenly spaced to each other and over the strings, they should not wander to either side as they lift, and there should be no change in the spaces between them. Once again, activating the right pedal is useful. Distinguish between spacing which changes unevenly, indicating twisting, and that which changes evenly, indicating wire travel.

In almost all instances, if you change bend #3, you should change #4 —changing it will affect travel by slightly reducing the effectiveness of bend #3.

After you change bends #3 and #4, recheck head spacing. In fact, before you correct spacing, check travel of the wire... and you might need to recorrect leaning... and if you change any bends, you'll need to check for twisting again... I told you this was a spiral.

Keep bending tools parallel to the sides of the heads: if all bends are kept in the same plane, it minimizes creation of rake or front-to-back travel. (This makes sense when you're looking at a damper system, I promise).

Try bending procedures on a grand action model if possible. Access is easier and the consequences of difficulty not so dire.

Next month we'll do some more troubleshooting, final lift setting, and pedal regulation. A closing thought: in most technical writing, describing the job takes longer than actually doing it. Damper work is an exception. I can bush a set of keys *and* hang a set of grand hammers in the time it takes me to reinstall and glue up felt in one damper system — if you're encountering the same thing, don't get too discouraged. It's just that kind of work.

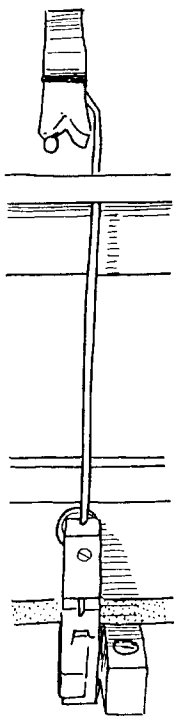


figure 3a

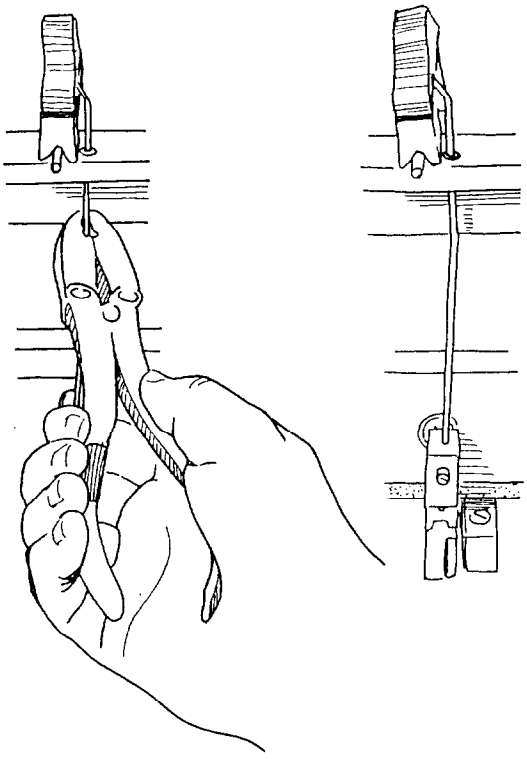
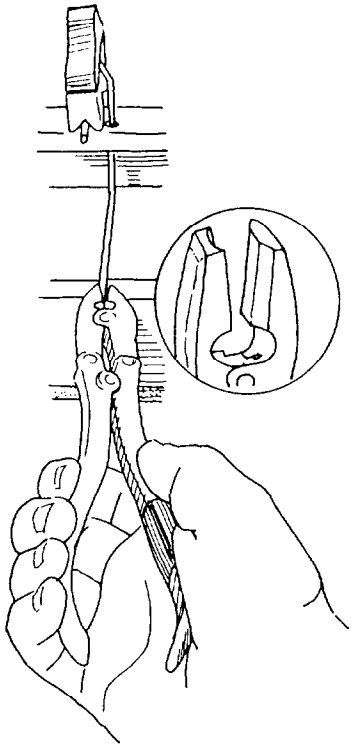


figure 3b

figure 3c



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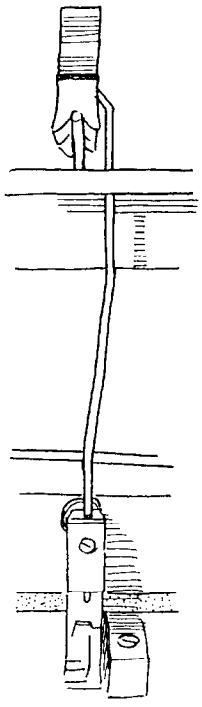
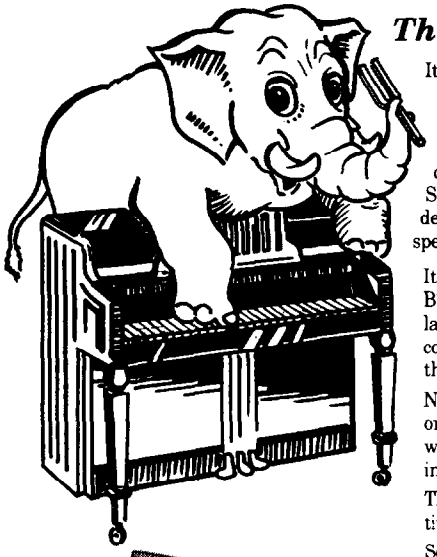


figure 3e

REMEMBER YOUR FINEST TUNING?



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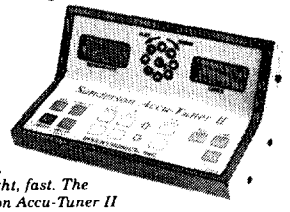

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TUNING UP

Letters

Rick Baldassin, RTT
Tuning Editor

This month we have several letters and articles which have been submitted. Our first letter comes from Dr. Earle Kent, of Elkhart, Indiana. Dr. Kent writes:

As I read the first portion of "Negative Inharmonicity" in the January issue of the Journal, *I was greatly impressed — as usual — and decided to write to you and compliment you on the great job you do in your work. I intended to ask in that letter if you received the data I sent long ago. As I continued in your article, I found the answer to that question. I appreciated seeing what you and Jim Coleman mentioned about it.*

Many years ago, one of Jim Coleman's brothers, Robert, said he had developed a mathematical model of the piano. I was not able to get any information from him about it at that time. I have often thought how useful it would be if that difficult task had been accomplished. Now that there are super computers and climate modeling, I feel it is quite possible that it can be done. If it is done in my life time it probably would have to be a labor of love rather than for financial gain. Keep up the good work. Thanks for your comments.

Thanks for the vote of confidence. I do not know if anyone has developed this mathematical model, but I am sure there are many who are interested in this subject. If anyone has developed such a model and would care to share it, please send it along to me.

Our next letter comes from Christopher C. Day, of Newtonville, MA. Christopher writes:

I read in the November issue of the tribulations of Jesse Manley with his hearing loss problems, and I was intrigued by his solution to tuning C6 using difference frequencies and comparing them to already tuned notes.

The technique of generating difference frequencies is regularly employed in less expensive church organs to simulate a 32-foot rank and usually consists of a closed flue pipe tuned to a perfect fifth above the note for which the sub-octave is desired. At a pinch the organist can play the fifth himself, but the tempered fifth will give a flat sub-octave. It is not clear why we hear the sub-octave note, but the suggestion is advanced that it is generated in the non-linearity of the ear. It is not, I understand, picked up by a frequency analyzer. It requires pipes with a large amount of fundamental note energy to work well.

Several other tuners and I tried to hear the difference frequencies specified by Jesse, but were unable to. I am now beginning to suspect that the difference frequencies heard by Jesse were being generated by the non-linearities in his bilateral hearing aids. All present day radio receivers use the superheterodyne principle beating a local oscillator with the incoming radio signal and the difference signal is extracted by means of a non linear detector circuit. Maybe hearing aids aren't all bad!

Having gotten my thought processes started, I wondered what sort of C6 such a technique would produce. The number crunching seemed straightforward if a little tedious. Thank heavens for computers and HP scientific calculators.

To make the problem a little simpler, I observed that it was scalable; that is, it would work for any frequencies, so that I could use any convenient starting point to get the answer which is ratiometric. Secondly, I argued that the problem was invertible; that is, instead of tuning C6 so that it beat with the test note in such a manner that the difference beats were the same as the frequency of the already-tuned lower note, I added the frequency of the low note to the test note to get the C6 note frequency, and then compared this with the true tempered C6.

First, I will take the lower fifth test note without stretch comparing it to the low 12th. The P12 is an increment of 19 semitones. The low note is always assigned a frequency of one Hz.

The octave is twice the low note, giving 1 + 2 = 3 Hz for the note being set. This translates into the set note (C6) being 1.96 cents sharp.

*The fourth test is as follows: The low interval is 19 semitones or 2^(19/12) = 2.99661, so the note being set is 3.99661 Hz (1 + 2.99661 = 3.99661). The tempered value is two octaves, or 4.00000. The cents difference is calculated as follows: c = [log(4.00000/3.99661)*1200]/log2*

This translates into the set note being 1.47 cents flat.

The problem becomes more complex if stretch is added into the equation. Arbitrarily, I selected a stretch of five cents per octave for this frequency range (C6). You may question the amount of stretch, but the principle still holds. Remember that this difference technique depends upon the differences between the two fundamentals so that inharmonicity does not enter into the calculation, only into the requirement for a stretched octave in the first place.

The fifth test is as follows: Let x = the stretched octave, then x = 2^(1205/1200) = 2.00578. The octave beats 1 + x = 3.00578. The tempered value is x^(19/12) = 3.01035. The set note would then be 2.63 cents flat.

The fourth test is as follows: The 12th beats at x^(19/12) + 1 = 4.00578. The tempered value is x^2 = 4.02317. The set note would be 5.53 cents flat.

These results suggest that either I have loused up in my math, or Jesse may be setting his high notes on the flat side. For his sake, I hope it is the former.

On an entirely different matter, I read with interest the tuning technique of Virgil Smith. I have always been concerned with the 'chicken and egg' aspect of having to decide on the appropriate interval speeds before testing the result to see if the correct speeds were chosen. I have two observations concerning his procedure:

In step 4 his D3-D4 octave test is that for a 6:3 octave and he requires the M6 to be

wider than the m3. This would set the octave wide of 6:3. I understand that most tuners set the temperament octave somewhere between 4:2 and 6:3, starting out with 4:2. Is there a misprint here?

In step 2, he sets F3-A3 to seven BPS. This is then used once in the crucial setup for determining the speed of the fourths. On a piano with high inharmonicity, this speed can drop quite a bit for smooth interval progressions. Granted that this speed does get corrected in step 8, however nothing is suggested about modifying it in step 4 through 7, where it effects the setting of the P4 speeds, and thus the subsequent M3 speeds. It seems that this procedure has not overcome the 'chicken and egg' problem, but merely buried it in a different part of the protocol. The answer may lie in the question of the sensitivity of the various tests to the setting of this beat frequency. Maybe someone has some enlightenment on the subject.

Our thanks to Christopher for his letter. I hope that his explanation of difference tones has been helpful. As to the questions he raised concerning Virgil Smith's procedure (printed in the December, 1990 issue), I believe it is the consensus of most tuners that the temperament octave is tuned somewhere between 4:2 and 6:3. This would mean that the M10 would beat faster than the M3, and at the same time the m3 would beat faster than the M6. Virgil does specify a wide 6:3 octave in this case, and this must be his personal preference. In some of the better scaled pianos, the difference between the 4:2 and 6:3 levels is so small, that with a normal amount of stretch at the 4:2 level, the octave does wind up wide at the 6:3 level as well.

As to the question of the initial setting of F3-A3, at seven BPS, I am sure we all realize that we have to start somewhere. The question is whether delaying the confirmation of this speed until step 8 effects the determination of the proper fourth speed. In carefully evaluating the system once again, I do believe that delaying the determination of the proper beat rate for the F3-A3 M3rd does impair our ability to determine the proper fourth beat rate. The reason is because the correctness of the fourths is determined by the relationship of two resultant minor thirds (D3-F3 and E3-G3), and assumes that F3 has been correctly set. The provision is made in step 8 to correct the F3-A3 M3rd by retuning F3. If this is done, then the relationship of the D3-F3 and E3-G3 minor thirds has been altered. This could be a minor point, and the effect diminishes the better you are at guessing.

In Virgil's system, the Major third rate is determined after having determined the fourth rate. If you were concerned about the need for correct placement of F3 before determining the proper fourth rates, you could simply determine the proper M3rd rate first. This could be accomplished by establishing the F3-A3-C#4-F4-A4 framework which has been discussed previously on several occasions. Since tuning F3 is listed as step 2 in Virgil's system, tuning C#4 and F4 could be inserted as steps 2a and 2b. Step 2c would be to confirm the proper 4:5 relationship between F3-A3, A3-C#4, C#4-F4, and F4-A4. Notes F3, C#4, and F4 are adjusted until this relationship exists. Steps 3, 4, and 5 would then be executed. Step 6, which was intended to establish the correct speed of the M3rds, would still be followed, (although in theory the correct speeds would have been established in steps 2a, 2b, and 2c) along with step 7. Step 8, which was provided to retune F3 if necessary, would simply be used to confirm the proper relationship between the E3-G3, F3-G#3, and F#3-A3 minor thirds. Steps 9, 10, and 11 would then be executed. Step 12, which was used to tune C#4, would simply be used to confirm that it was tuned correctly in step 2a.

This system would tune one more note (F4) than was tuned in Virgil's system, but would preserve his scheme of determining the proper fourth speed by comparing the beat rates of the two resulting m3rds, which I thought was kind of neat. So that you will not have to keep flipping back and forth between this issue and December 1990, I have reprinted Virgil's procedure below:

1. Tune A4 to fork and A3 to A4, using F2 as a guide.

2. Tune F3 to A3 at approximately seven BPS. This is the only beat speed mentioned; every other beat speed is relative.

3. Tune D4 to A3 (fourth). Checks: F3-D4 sixth beats faster than F3-A3 third, and the A3-D4 fourth will have a definite slow beat.

4. Tune D3 to A3 (fifth) and to D4 (octave). Checks: The octave must sound clean; D3-F3 m3rd beats faster than F3-A3 M3rd, but slower than F3-D4 sixth; A#2-D3 third beats slower than A#2-D4 10th; D3-A3 fifth has a very slow beat.

5. Establish speed of fourths for the particular piano being tuned. Tune G3 to D3 (fourth), and E3 to A3 (fourth). Checks: A#2-D3 third with A#2-G3 sixth, and C3-E3 third with C3-A3 sixth (each sixth must beat faster than the third); E3-G3 m3rd with D3-F3 m3rd (E3-G3 m3rd must beat faster than D3-F3 m3rd); both fourths beat at the same speed. The m3rd is a very sensitive interval. If the fourths beat too fast, the E3-G3 m3rd will be too slow, and if the fourths are too slow, the m3rd will be too fast. The correct speed of the E3-G3 m3rd ensures the correct speed of the fourths.

6. Establish the correct speed of M3rds. Tune D#3 to G3 (M3rd) and G#3 to E3 (M3rd). Checks: E3-G#3 M3rd beats slightly faster than D#3-G3 M3rd; D#3-G#3 fourth beats the same speed as D3-G3 fourth and E3-A3 fourth. There is only one place to tune these two notes that will fulfill these requirements. The correct fourth may be tuned higher or lower until the thirds properly relate.

7. Tune F#3 to D3 (M3rd) slightly slower than D#3-G3 (M3rd). Check: D#3-F#3 m3rd beats slightly faster than D3-F3 m3rd and slightly slower than E3-G3 m3rd.

8. Retune F3 to A3 (M3rd) if necessary. Check: F3-G#3 m3rd should fit between E3-G3 m3rd and F#3-A3 m3rd.

All notes between D3 and A3 are now tuned. Before continuing, check all intervals and make any minor corrections necessary. Check the three fourths, the four M3rds, and the five m3rds for complete consistency. If all are correct, the rest is easy.

9. Tune A#3 to the following three notes: D#3 (fifth), F3 (fourth), and F#3 (M3rd) so that all intervals match their lower neighbors. The F#3-A#3 M3rd will beat faster than the F3-A3 M3rd, and the relationship between how much faster the F3-A#3 fourth is than the D#3-A#3 fifth will be established and maintained throughout the entire tuning.

10. Tune B3 to the following three notes: E3 (fifth), F#3 (fourth), and G3 (M3rd), so that all intervals match their lower neighbors.

11. Tune C4 to the following three notes: F3 (fifth), G3 (fourth), and G#3 (M3rd), so that all intervals match their lower neighbors.

The Ideal Aural Tuning, Part I: The Introduction

James Coleman, RTT
Phoenix, AZ, Chapter

Few of us would deny the principle that a good aural tuning begins with a well balanced temperament, where each of the various intervals increases in beat speed as the interval ascends the chromatic scale in the center of the piano. The first problem of agreement, however, occurs when we begin to discuss the octave width or the amount of stretching of the octave. How much is just right? Should the octave be such that the M3rd-10th test demonstrates equal beat rates? (eg F3-A3 = seven BPS, and F3-A4 = seven BPS).

It seems that we are beginning to approach a consensus that the octave needs to be stretched a little more than what the above example would give us for at least two reasons.

The first is quite simple: the m3rd-M6th test would prove the above octave to be flat or narrow. One can demonstrate this by tuning the A3 lower until the m3rd (A3-C4) beat rate equals the M6th (C4-A4) beat rate. When you do this, you discover that the above M3rd-M10th test is no longer equal, but stretched. It is most likely that the stretching will be too much to suit you and the octave A3-A4 sounds too wild for you.

The second reason some stretching is needed is that considerable stretching is needed in the high treble to avoid having a flat-sounding treble, and the sooner one starts the stretching, the less abrupt it will need to be in the sixth and seventh octaves.

In tuning octaves in the bass, we find a similar need to stretch; however, in this case we must stretch more and more as we go down the scale. Again the question arises: How much is enough?

In this series of articles, we hope to lead to some kind of agreement as to what is best in the way of general octave stretch.

What do we do when in the process of maintaining our ideal octave stretch, we find that the smooth progress of sixths, 10ths, or 17ths is interrupted? Or, vice versa, what do we do when in the process of maintaining a smooth progress of the above intervals, or our favorite interval, we find that our octaves and double octaves are irregular?

Most of us as aural tuners have struggled with this problem for years. Compromise is the name of the game in temperament setting. We make the best compromise possible. Is it not the same when it comes to octave tuning? Are we not trying to get the most harmonious overall sound from the piano during the whole tuning process? Do I hear an Amen of agreement? Is it not true that in the tuning process we wish to keep all intervals in an even progression, as far as is possible, and that all octaves, double octaves, and triple octaves shall be in the best balance possible? What do we do when we encounter a break in the stringing scale? Or what effect does the location of a wire size change have in smooth treble tuning? In most pianos this certainly does make a difference in inharmonicity, and consequently a jump in beat rates. In this case we usually compromise to maintain general evenness.

A very impressive presentation was given at the Dallas PTG Convention Institute by Steve Fairchild where he was able to demonstrate an ideal tuning from the aural perspective in that the octave stretch was harmonious, and that all the intervals checked were beautifully in line. After his presentation, the following quote was heard, "You have now accomplished what many of the rest of us have only dreamed of doing."

In the next of this series of articles, an attempt will be made to show that there is a way to deal with the above problems, and we may discover the "state of the art" approach to accomplishing our goals.

12. Tune C#4 to the following three notes: F#3 (fifth), G#3 (fourth), and A3 (M3rd), so that all intervals match their lower neighbors.

13. Retune D4 if necessary, so that the A3-D4 fourth matches the other fourths, the A#3-D4 M3rd matches the other M3rds, and the G3-D4 fifth matches the other 5ths. Also, re-check the D3-D4 octave.

As the final check, to insure a completely accurate temperament, listen and make any final adjustments by playing up chromatically by fifths, fourths, Major thirds, Major sixths, and minor thirds. Don't be satisfied until each interval progresses smoothly and consistently.

*****

Perhaps Virgil has some thoughts on the subject. Again, our thanks to Christopher for his letter. Until next month, please send your questions and comments to:

Rick Baldassin
Tuning Editor
2684 W. 220 North
Provo, UT 84601

The Piano Triangle

Daniel Bowman, RTT
Richmond, VA, Chapter

I once heard a James Madison University music student pointing out to his friends that the piano is the only instrument which the musician does not tune for himself and which the musician does not embrace to himself. Actually the organ and several other instruments also belong in this category, but he was calling attention to an interesting problem. How direct and immediate is the relationship between the musician and his/her instrument? How freely can the musician communicate his feelings *to* and therefore *through* the instrument? Or, how much expressive control does the musician have over the instrument?

Accessibility to the tuning by the musician is very important in determining amount of expressive control. I'm talking about both the "tuning up" before the performance and the ability to nuance pitch during performance.

Rather than size of the instrument per se, however, I would point to the instrument's playing action as the other really critical element in the musician-instrument relationship. In most cases the musician does in fact embrace the instrument, making it virtually an extension of his/her own body. But more importantly, the hands or the mouth are in direct contact with the strings, or reed, or air column. Many times there is a single object such as a stick, mallet, pick, or bow between the hands and the instrument proper, but the relationship to the instrument is still quite direct and immediate. By "direct and immediate" I mean that changes in physical exertion or force translate instantaneously into changes in musical expression. When you bang harder on the xylophone or blow harder on the clarinet, the change is instant and proportional in the music. In contrast, pressing the organ or harpsichord key harder makes no difference in the music, thus making a more remote relationship between performer and instrument.

With the piano, the tuning is, of course, inaccessible to the musician. To get the tuning the way he/she wants it, a second party must be involved. Enter the professional tuner into the musician-instrument relationship. (And even then, forget pitch nuancing during performance.) But, this second party involvement in the tuning is only part of the story.

It is in the playing action where we find the "forte" of the piano (pun intended) and where the second party involvement in the relationship with the instrument takes on added importance. If a mechanical contraption (as opposed to a single object) is going to be interposed between the hands and the instrument, the question is: Can it be made to use the natural movements of the fingers, hands, and arms to operate, say a felt covered hammer in such a way that changes in force of hand movements are reflected accurately as changes in force of hammer movements? Only with such an arrangement can the emotions of the artist be transmitted *to* and therefore *through* the instrument. To my knowledge there are only two instruments where this has been achieved — the tracker action carillon and the piano. Other mechanical actions such as those in the organ and harpsichord do not have this capacity for "piano and forte." Whatever else the piano is or is not, its success is based on the fact that its action provides a contraption on which the hands can romp and dance with astonishing freedom and in which those movements, as well as changes in force of those movements, are faithfully transmitted to the music. When the hands can dance on the keys, the spirits of the universe can dance on the strings. Corny poetry perhaps, but those words point to the genius and uniqueness of the piano's action.

It is this sensitive, responsive action which allows the musician to achieve an intimate relationship with the piano despite its pitch rigidity and unembraceable sensitive, responsive action is mostly made of notoriously unstable materials — wood and felt. To keep this action sensitive and responsive, it must be periodically regulated. Notice how the other musicians are always fussing over their reeds, picks, bows, strings, mouthpieces, etc. The ability to get the instrument just the way the musician wants it is important to the making of good music. But the pianist cannot do this regulating and tinkering himself/herself. So, once again, enter the professional technician into the musician-instrument relationship.

Perhaps we are saying here that the piano is unique in one more way. The musician-instrument relationship is a triangle consisting of the piano, the artist and the technician. If this is true, then we in the piano world do well to work at good communicating and listening skills. Another way to conclude this article is to say that to make good music on a fine piano, there must be a good relationship and good communication between artist and technician.

At Large

Aural Structural Tuning

William Moonan, RTT
Syracuse, NY, Chapter

The essential *tonal* framework of the music of Western civilization is made up entirely of the so-called "perfect" intervals (unison, octave, fifth, and fourth); these are *tonality*-defining intervals; they establish *tonality*.

The so-called "major" and "minor" intervals (thirds and sixths) are *modality*-defining intervals: their function is to color the *tonal* structure and to establish *modality*. Curiously enough, it requires only one third to color a whole series of *tonal* intervals either "major" or "minor."

The piano tuner's challenge is to combine these two kinds of intervals (*tonal* and *modal*). A series of contiguous *modal* major thirds, if tuned as non-beating intervals in just intonation, falls far short of the structural *tonal* interval, the octave. In orchestral playing or in choral singing the musicians are able to adjust individual thirds in order to play or sing more "in tune." In the case of the piano, such adjustments are not possible, however by altering the *modal* intervals (widening the major third or narrowing the minor third) the purest possible intonation of the *tonal* intervals is achieved, and the resultant vibrato-like beating of the *modal* intervals produces a pleasant effect not unlike singers or instrumentalists producing a vibrato while also singing or playing "in tune."

Indeed, in piano tuning all intervals except the unison are either expanded or contracted and the rapidity of the beating of the various intervals constructed upon a given tone increases gradually through a progression of intervals which is consistent with the harmonic series.

The progression of intervals and their expansion or contraction according to the harmonic overtone series is as follows: *Tonal intervals*: unison (beatless); octave (practically beatless but very slightly expanded); fifth (seemingly beatless but slightly contracted to produce a very slow wave); fourth (also practically beatless but slightly expanded to produce a very slow wave slightly faster than the slow wave of the contracted fifth). *Modal intervals*: major third (expanded to beat noticeably/its inversion, the minor sixth, contracted); and minor third (contracted to beat faster than the major third/its inversion, the major sixth, expanded).

While the end result may be equally tempered semitones, the term *Structural Tuning* seems more appropriate than *Equal Tempered Tuning* simply because in tuning a piano, the tuner is not directly concerned with or even able to directly tune equal semitones, but is able to construct a series of harmonic structures (intervals, triads, etc.) each of which will sound as much "in tune" as possible, and also be compatible with other harmonic structures sharing one or more of the same tones. For example, not only must E4 serve as the root of E triads, but also as the major third of C, the minor third of C#, the perfect fifth of A, the diminished fifth of A#, the minor seventh of F#, the major seventh of F, etc.

Part I: Measuring The Inharmonicity Of The Piano

To measure the inharmonicity of the individual piano being tuned, two contiguous octaves are tuned at the outset (A4-A3, A3-A2). Subsequently a series of contiguous major thirds are tuned between A2 and A4 in the approximate ratio of 4:5.

Step 1 - Tune A4 to fork (using F2 as a reference tone).

Step 2 - Tune A3 down an octave from A4.

Step 3 - Tune A2 down another octave from A3.

(Check the double octave A2-A4 and tune A2 so that it is as beatless as possible. If need be, adjust A3 as required.)

Part II: Establishing A Framework Of Contiguous Major Thirds

A series of contiguous expanded major thirds roughly in the ratio of 4:5 is established within the double octave, beginning with A2-C#3; each beating faster than its contiguous third below.

Step 1 - Tune C#3 from A2.

Step 2 - Tune F3 from C#3.

(The advantage of this method is it takes the guesswork out of how fast the lowest third of the temperament octave should beat, in this case the F3-A3 major third. The A2-C#3 third in all well-tuned pianos must beat approximately 4.5 BPS (beats per second). (The second hand of a quartz watch can reliably serve as an accurate measure of this; Often, perhaps due to our varying emotional states, our estimate can be quite wrong.) Also, the C#3-F3 third must beat in the neighborhood of 5.6 BPS (also easily checked against the second hand of a quartz watch to beat slightly faster than five BPS). By observing whether or not the already tuned next higher contiguous third, F3-A3, is beating as it should (about 1.5 BPS faster than the lower contiguous third, C#3-F3) it can be roughly determined whether or not the tuning thus far has been accurate. If not, quite possibly the A2-A3 octave is too narrow.

The remaining intervals in the contiguous third structure should now be tuned by octaves, using the major third-major tenth test as follows:

Step 3 - Tune C#4 from C#3.

Step 4 - Tune F4 from F3.

(Now check the remaining major third F4-A4 to be sure it beats faster than the contiguous third below it, C#4-F4. If not, corrections are in order. Also check the series of contiguous thirds. Remember — each third should beat faster than the contiguous third below it and slower

than the contiguous third above it.)

Step 1 - Tune F#3 down a fifth from C#4. Tonal. (Check the fourth C#3-F#3.)

Step 2 - Tune A#3 up a third from F#3. Modal. (Each adjacent third should beat slightly faster than the adjacent third below it. Compare the F#3-A#3 third with the F3-A3 third. Also compare all adjacent thirds in each of the remaining steps. Check the fourth, F3-A#3 and the fifth. A#3-F4.) Also check all available fourths and fifths in each of the remaining steps.

Step 3 - Tune D4 up a third from A#3. Modal. (Check the fourth, A3-D4. Compare A#3-D4 with A3-C#4.)

Step 4 - Tune D3 down an octave from D4. Tonal.

Step 5 - Tune G3 down a fifth from D4. Tonal. (Check the fourth D3-G3 and fifths D3-A4 and G3-D4.)

Step 6 - Tune B3 up a third from G3. Modal. (Check the fourth, F#3-B3. Compare F#3-A#3 with G3-B3.

Step 7 - Tune D#4 up a third from B3. Modal. (Check the fourth, A#3-D#4. Compare A#3-D with B3-D#4.)

Step 8 - Tune D#3 down an octave from D#4. Tonal. (Check the fifth, D#3-A#3. Compare D#3-G3 with D3-F#3.)

Step 9 - Tune G#3 down a fifth from D#4. Tonal. (Check the fourths, G#3-C#4, D#3-G#3, & fifths, G#3-D#4.)

Step 10 - Tune C4 up a third from G#3. Modal. (Check the fourths, G3-C4, C4-F4 & fifth F3-C4. Compare G#3-C4 with G3-B3.)

Step 11 - Tune E4 up a third from C4. Modal. (Check the fourths, B3-E4 and E4-A4 and the fifth, A3-E4. Compare C4-E4 with B3-D#4, C#4-F4.)

Step 12 - Tune E3 down an octave from E4. Tonal. (Check the fourth, E3-A3 and the fifth E3-B3. Compare E3-G#3 with D#3-G, F3-A3.)

Further refinement of the temperament may be possible by applying a comparison test within the temperament. For example: Beats of the sixth F3-D4 should match the beats of the third G3-B3; F#3-D#4 should match beats of the third G#3-C4, etc., with corrections made as indicated by the tests.

The author gratefully acknowledges that many of the concepts expressed were derived from attending classes given by and/or by reading the publications provided by the following Craftsman members of the Piano Technicians Guild: Evan Giller, Christine Lovgren, Albert E. Sanderson, Paul J. Simkin, William Stegeman, John W. Travis, and William Braid White. ≣

The Beat Frequencies Of The Various Intervals As A Function of Stretch Numbers

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In this article, a method is developed and demonstrated for calculating the beat frequencies heard when two piano notes of various intervals are played simultaneously. These beat frequencies vary with stretch number (the degree of "inharmonicity").

Calculation Of The Frequencies Of Partials

Because of the springiness of steel wire, the partial vibrations are progressively raised in pitch compared those expected in a true harmonic relationship. Since tuning is done by matching the "partials" of two notes to tune a desired interval, the frequencies of these "partials" must be known in order to tune the interval accurately.

The definition of *stretch number* used here is borrowed from the Sight-O-Tuner literature. It is the difference in cents between the fourth partial and the second partial (ignoring the obvious 1200 cents). The stretch number varies in a range from two to 10.

The stretch number of strings in the temperament octave rise slightly from bottom to top. There may be random scatter between adjoining strings of up to one stretch number. However, the effects of stretch number are illustrated more clearly by assuming a constant stretch number throughout the temperament octave.

An *inharmonicity constant* frequently defined in the *Journal* is: $K = \Delta c / (n_2^2 - n_1^2)$ where K is the inharmonicity constant, Δc is the cents difference between n_2 and n_1 partials.

Consider only the second and fourth partials. Then Δc is the stretch number. $K = (\text{stretch number}) / (4^2 - 2^2)$

$K = (\text{stretch number}) / 12$

We are interested in the cents difference of partials with respect to the fundamental. Therefore, in the ensuing calculations, $n_1 = 1$

The stretch above the nth partial is $K \times (n^2 - 1)$ cents, or: cents = (stretch number)/12 x $(n^2 - 1)$. (equation 1)

The familiar expression converting frequency ratio to cents is: cents = 1200 / log(2) x log(A / n) (equation 2) where A is the normalized frequency of the nth partial.

In this instance, we know the cents but need to solve for the frequency ratio. So we must solve equation 2 for A/n: cents x log(2) / 1200 = log(A / n)

Taking the antilogarithm of both sides: A / n = exp(cents x log(2) / 1200) (equation 3) where "exp" means 2.71828 raised to the indicated power. 2.71828 is the base of the system of natural logarithms.

Now plug in the expression for cents from equation 1 into equation 3. The nth partial is: A(n) = n x exp[(stretch number) x (n^2-1) x log(2) / 14400] times the frequency of the fundamental.

So any partial frequency can be calculated. It is a function of three inputs: the fundamental frequency, the partial number, and the stretch number.

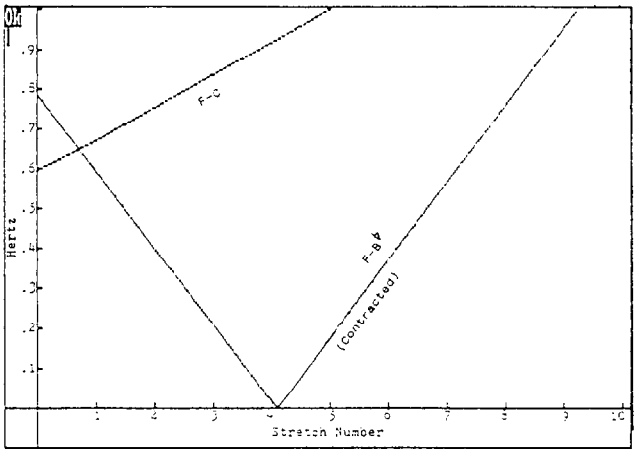


Fig. 1 Beat Frecuencies Of FOURTH and FIFTH as Functions Of Stretch Number
F45 tuned 2:1 above F33. The resulting octave divided into twelve equal semitones.

Calculation Of Beat Frequencies

For convenience a shorthand notation will be used. An asterisk (*) attached to any integer such as 8* is to represent the ratio of an eighth partial to a fundamental. 8* is then a number slightly greater than 8. These are the numbers developed in the previous section.

The beat frequency of a perfect fifth is beat(P5) = f x (3* - 2* x 2* exp(7/12)) where now the operator exp has a different meaning than when used previously. Here it indicates 2* raised to the (7/12) power. And f is the frequency of the lower note of the perfect fifth. Obviously the seven is because there are seven semitones in a perfect fifth, and a perfect fifth is 7/12 of an octave.

For another example, calculate the beat frequency of a major sixth: beat(M6) = f x (5* - 3* x 2* exp(9/12))

This calculates the fifth partial of the lower note minus the third partial of a note nine semitones higher.

Most readers can now plug in the numbers to calculate the beats for other intervals but some are included for the record: beat(m3) = f x (6* - 5* x 2* exp(3/12)); beat(M3) = f x (5* - 4* x 2* exp(4/12)); beat(P4) = f x (4* - 3* x 2* exp(5/12)); beat(dim5) = f x (7* - 5* x 2* exp(6/12)); beat(m6) = f x (8* - 5* x 2* exp(8/12)); beat(M10) = f x (5* - 2* x 2* exp(4/3))

Plotting Beat Frequencies Versus Stretch Number

In this analysis the lower note of all the intervals is F33 and its frequency is calculated as Freq(F33) = 440 / 2* exp(4/3) and will be slightly variable depending on the stretch number.

There seems to be a consensus among the tuning experts that an octave in the temperament range should be between a 4:2 and a 6:3 octave, somewhat closer to 4:2.

This was accomplished on the computer using a standard interpolation formula. Octave ratio = $(2 \times 4^*/2^* + 6^*/3^*)/3$

The computer divides that octave into 12 equal semitones. If the octave is widened, the semitones and all other intervals are widened. Fourths and fifths, since they beat at low frequencies, are very sensitive to widening and, at high stretch numbers, may cross over zero.

Graphs Of Beat Frequencies Versus Stretch Number

The beat frequencies of the fourths and fifths vary in a seemingly wild manner as the octave is widened from 2:1 to 6:3. This is shown in figures 1 through 5. Note that with the octave tuned between 4:2 and 6:3, the perfect fourth comes out at 0.8 hz for all stretch numbers and the perfect fifth at zero beat frequency for a wide range of the most typical stretch numbers. Graphs of the beat frequencies of minor third, minor sixth, diminished fifth, major third and major sixth versus stretch number are shown in figures 6 and 7. ≣

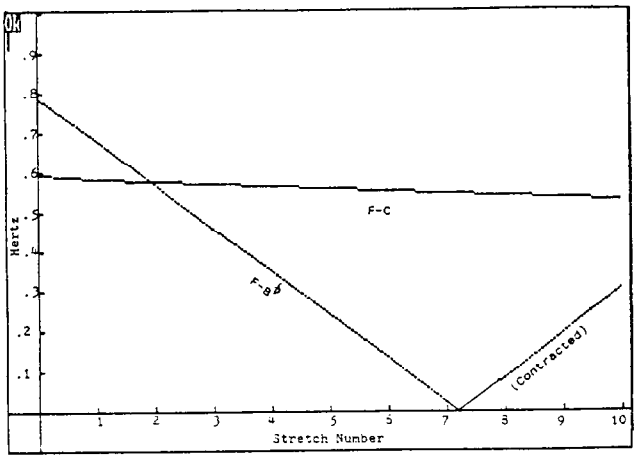


Fig. 2 Beat Frequencies Of FOURTH and FIFTH as Functions Of Stretch Number
F45 tuned between 2:1 and 4:2 above F33. The resulting octave divided into twelve equal semitones.

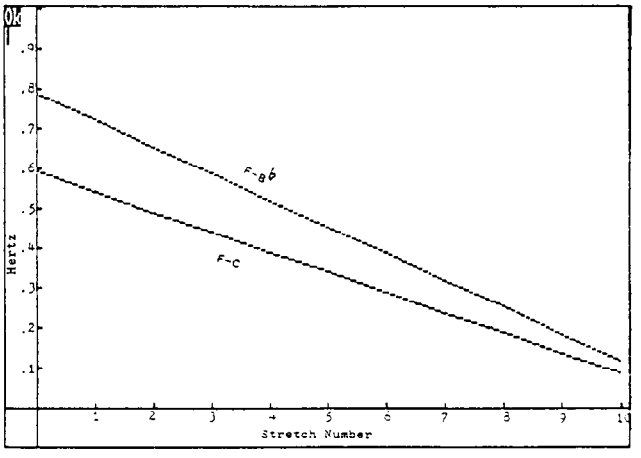


Fig. 3 Beat Frequencies Of FOURTH and FIFTH as Functions Of Stretch Number
F45 tuned 4:2 above F33. The resulting octave divided into twelve equal semitones.

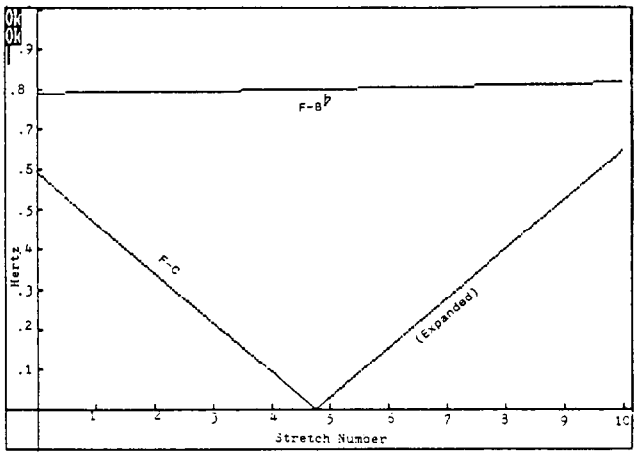


Fig. 4 Beat Frequencies Of FOURTH and FIFTH as Functions Of Stretch Number
F45 tuned between 4:2 and 6:3 above F33. The resulting octave divided into twelve equal semitones.

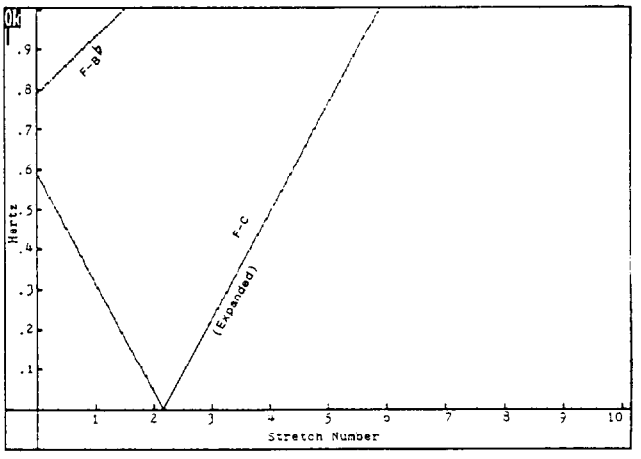


Fig. 5 Beat Frequencies Of FOURTH and FIFTH as Functions Of Stretch Number
F45 tuned 6:3 above F33. The resulting octave divided into twelve equal semitones.

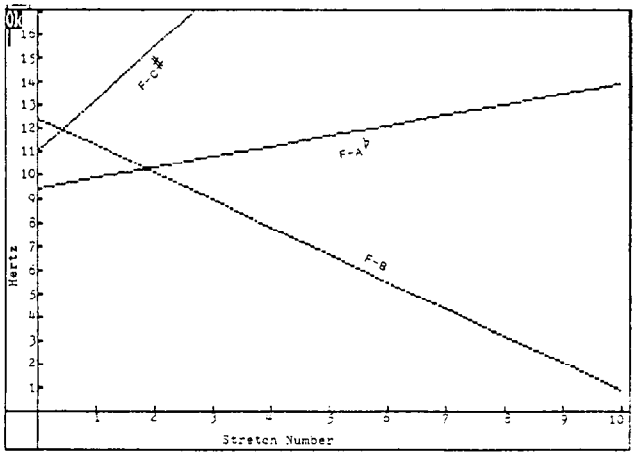


Fig. 6 Beat Frequencies Of MINOR THIRD, MINOR SIXTH and DIMINISHED FIFTH as Functions Of Stretch Number
F45 tuned between 4:2 and 6:3 above F33. The resulting octave divided into twelve equal semitones.

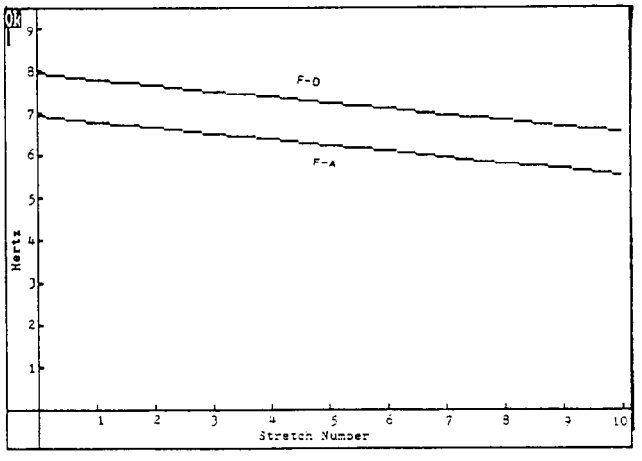


Fig. 7 Beat Frequencies Of MAJOR THIRD, and MAJOR SIXTH as Functions Of Stretch Number
F45 tuned between 4:2 and 6:3 above F33. The resulting octave divided into twelve equal semitones.

Key Recovering, Part II

Bill Spurlock, RTT
Sacramento Valley Chapter

In part 1 of this series, I discussed removal of old keytops and sharps, removing the old key fronts with a router jig, and milling down the key wood using a rotary planer. Here I'll continue with instructions and fixtures for gluing on the new keytops and trimming the excess plastic flush with the sides of the keys.

Adhesives

It is not uncommon to see a two- or three-year-old key recovering job shedding its keytops; to me this is a sad sight, especially if I was the one who installed those tops! Yes, I have had to re-do a few set of keys. To save you from the fate I will share my experience with adhesives here.

I have always used (and still use) contact type adhesives for installing new plastic keytops. I prefer this type of adhesive because it requires only momentary clamping, whereas other types of glue would require more extended clamping which would slow down the process and require multiple key clamping mechanisms. I have discovered, though, that not all contact cements are durable. Specifically, I have had trouble with aerosol can glues. Although convenient to apply, these tend to dry out and lose their elasticity and grip after a while. Even the industrial grades of aerosol contact cement seem unstable; I find that these will not even hold sandpaper onto paddles for more than a few months. I have gradually grown to hate spray can glues, and do not recommend them for any permanent work.

I have had good success with *liquid* industrial cement of the type used for laminating formica in the counter-top industry. Counter-top shops apply this adhesive with spray guns and rollers, so it has good consistency and working time for brushing or rolling onto keys. Laminating shops stock this adhesive in 55-gallon drums, and will pump a gallon into your container for a reasonable cost. Try to find the neutral color, rather than more common red or green. Disadvantages of this type of glue are the dangerous fumes, flammable solvents, and its tendency to dissolve plastic keytop material (this is a problem if any glue drips onto the top surface of the key).

A readily available industrial grade laminating glue is Constantine's Veneer Glue, a non-flammable contact cement. When reduced 25% with the recommended thinner, it is easy to apply with a roller or brush. I have done many sets of keys with this glue and have had good results, although it does have dangerous fumes and will etch the plastic.

For the past year and a half, I have been using water-based contact cement which I like better than anything else that I've tried. The product is 3M company's Fastbond 30-NF Contact Adhesive, neutral color; it is usually found in better hardware stores or industrial supply stores that sell products for tile work. This glue is very strong, has no objectionable fumes, and is non-flammable. I have torture-tested it by gluing sample keytops to wood scraps and leaving them exposed to direct sunlight, moisture, and cold on my shop windowsills for over 18 months. Occasionally I pry a keytop off to check the glue bond; despite the extreme conditions the glue remains very pliable and the bond so strong that wood tears loose when the keytop is pried off. Even on areas of the test scraps that were coated with glue and not covered with plastic, the glue remains pliable. This ability to remain elastic over time is essential to a reliable glue bond. In this respect, the 3M product seems more stable than any other I have tried. However, just as all glue containers bear a disclaimer, I cannot guarantee that a particular glue will work well for you in all cases; you're on your own!

Applying Adhesive To The Keys

As mentioned in part 1, the keys are most efficiently handled by placing them on a 18" x 48" plywood "tray." They are placed in order on the plywood as the old ivories are removed, then the tray and keys are carried to the drill press for planing. As each key is planed it is set back in position on the tray, which is then moved to the gluing area.

I like to apply glue to the keys using a small paint roller. By lining the keys up evenly and clamping them tightly side to side, the glue can be rolled on as though the keys were one solid surface. This goes much faster than brushing, and also leaves a uniform glue layer that is free of lumps. I use the following procedure: First, using your key leveling stick, bump all of the key fronts into line, leaving the key fronts hanging over the edge of the plywood slightly. Next, clamp a small wood block to the plywood beside each end key to hold all the keys tightly together. Now plane. Lay a strip of masking tape along the keys just behind the planed area to shield the wood from the glue.

On another piece of plywood, lay the keytops out upside-down and in chromatic order, with their edges touching. Push them all into line with a straightedge. Next, lay a piece of masking tape down along the key fronts, just covering the last 1/16" of the fronts. This will hold the keytops down to the board as the glue is rolled on, and will also shield the lip overhang from glue.

Obtain a three-inch paint roller such as is used for painting trim. If using

the 3M water-based adhesive, the thin grey foam rubber-covered rollers work best. However, if you are using a solvent-based adhesive you will have to use a conventional short-nap roller since the solvents will attack the foam rubber. It is most economical to purchase standard 10" rollers and saw them up into three pieces.

The 3M adhesive is about the consistency of milk and requires no thinning, while some solvent-based adhesives need to be thinned in order to spread smoothly. Pour a pancake-sized pool of glue into an aluminum pie pan and load the roller with glue. Tilt the pan and work the roller back and forth on the high side of the pan to distribute the glue evenly and remove any excess.

Apply glue to the keys first. When the roller has just been loaded with glue, roll very lightly to prevent excess glue from running down the sides of the keys. You can then use more pressure as the roller dries out. Working quickly, run the roller lengthwise from tails toward heads over three to four keys at a time. When you get to the end of the keyboard, go back and apply a second coat. If you are installing tops *with* fronts, you will of course roll glue onto the key ends also. Wood is porous, so you need to apply enough glue so that when it has dried you will still see a definite glue layer on the wood. There will always be a little glue that gets onto the sides of the keys in the sharp notches, but this will be removed later in the trimming process. *Immediately* after applying the second coat, wipe any glue off the old plastic key fronts (if present). (For the 3M glue, use a wet sponge followed by a dry cloth. For solvent-based glues, use the appropriate thinner.) Then without delay remove the clamping blocks from the end keys and separate all keys slightly. This prevents the glue skin from sticking all of the keys together. This is especially important with 3M glue, since tearing keys apart later will pull some of the glue loose from the wood surfaces.

Next, roll a single thin coat of glue onto the keytops. For one-piece tops with fronts, you may have to finish up with a brush to get glue into the corners.

Installing The Keytops

Most contact cements need to dry before assembly; follow the directions for the product you are using.

Assembling the keytops onto the keys requires careful alignment. I use the simple jig shown in figure 1 to establish the correct amount of key "lip" protruding over the front of the keys. The jig is clamped down, over a piece of newspaper for padding, about five inches from the edge of the work bench. A keytop is placed glue-side up with the lip pushed into the groove in the jig; the left thumb pushes the tail against the jig while the right hand lowers the key down onto the plastic. The jig ensures a consistent lip overhang when using tops only, and simply acts as a bench stop when using one-piece tops with fronts. Working with the key and keytop upside-down in this way gives you the best visibility for achieving correct side-to-side alignment.

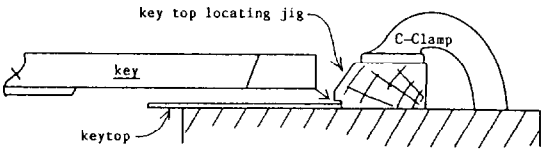


figure 1: key top locating jig

The plastic will be trimmed flush with the sides of the keys using a router. However, the "playing edges" of the keys (adjacent sides of white keys) will need to be slightly rounded, and this will have to be done by using a hand file. Therefore, in order to minimize the amount of hand filing that will have to be done, you should position the key on the keytop for best alignment of these playing edges and ignore any plastic overhang in the sharp notch. If the key is just slightly narrower than the keytop I normally center the key on the top, leaving a slight plastic overhang on each side. The molded rounding on the keytops is usually generous enough that adequate rounding remains after routing off a small overhang, and little or no filing is needed. However, if the key is *much* narrower than the keytop it is better to favor alignment of the longest side of the key; this way you will only have to re-round one side with the file, rather than both.

In order to bond strongly, surfaces coated with contact cement need to be pressed tightly together. Only momentary clamping is required, but enough force must be used to ensure complete contact of both surfaces. In the case of keytops, I do not feel that hand pressure is adequate; besides, hand pressing is slow and tedious. Instead, I prefer to use a woodworking vise fitted with drop-in padded jaws as shown in figure 2.

These vises are available in a variety of sizes; any size is adequate for keytop pressing but since they are an essential woodworking tool I suggest buying the largest you can afford. Look for one with a "quick release" mechanism. This feature allows the screw handle to engage or release with just one

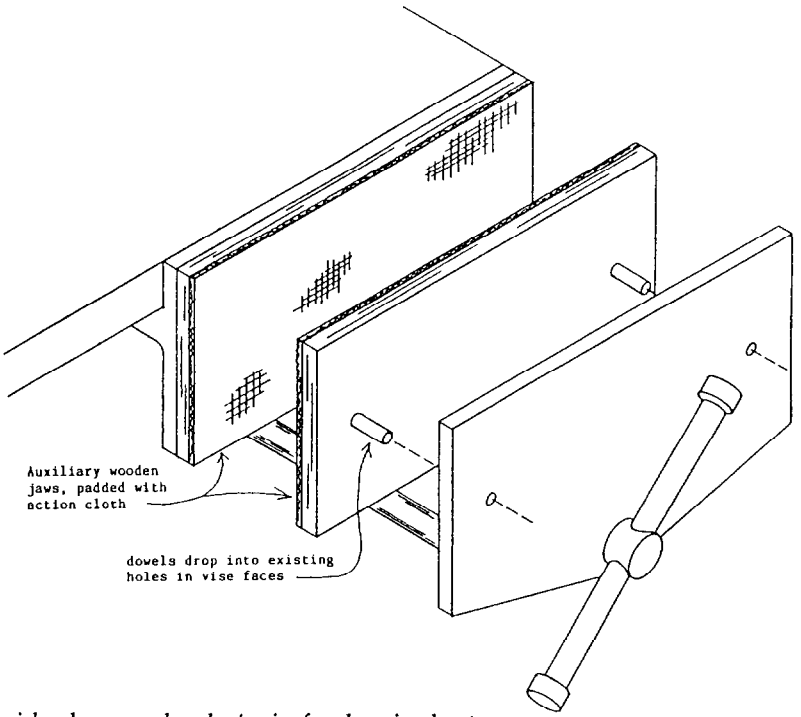
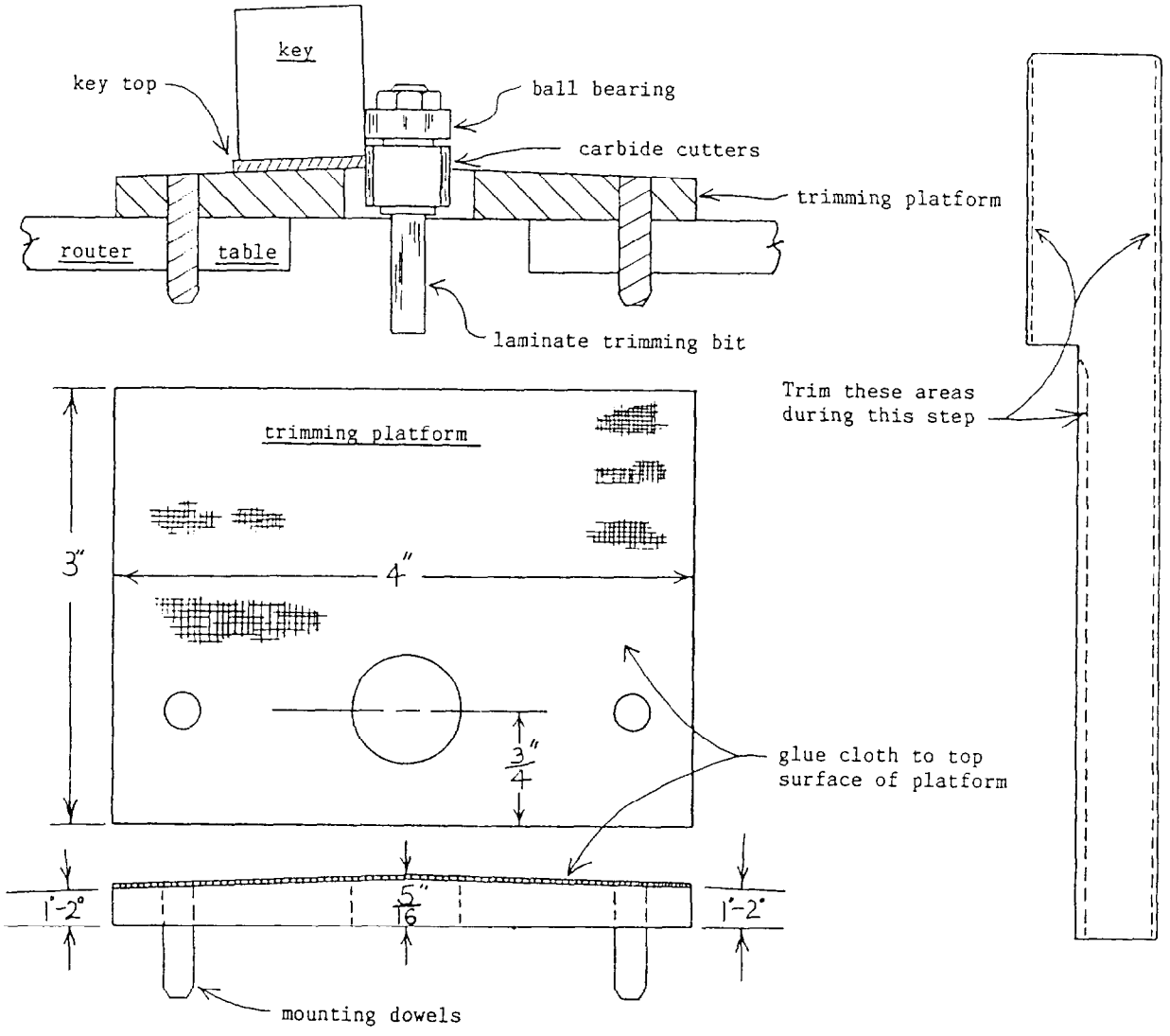
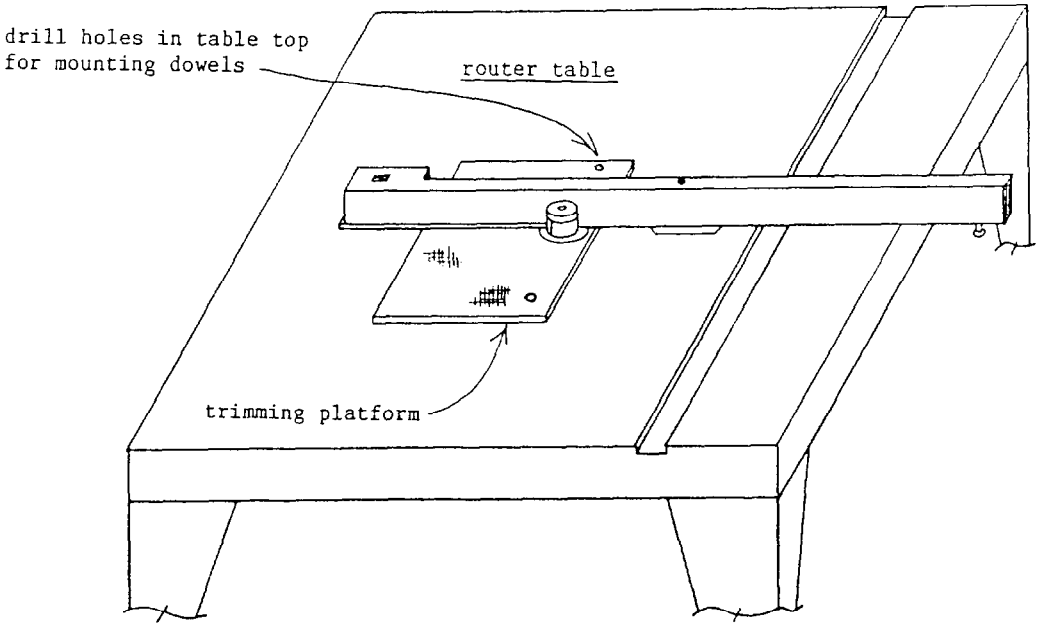


figure 2: quick-release woodworker's vise for clamping key tops

figure 3: router trimming of key sides





turn of the handle. Once released, the movable jaw can then be simply pulled out to any opening without having to turn the screw. Once slid open, the jaw can then be slid closed against the object being clamped and tightened with a single turn of the handle. If you do not have one of these vises, get one for key recovering and you will soon wonder how you got along without it. The auxiliary drop-in padded jaws make the vise even more useful, especially for holding finished case parts during assembly or repair. Like most tools, the most economical vises are found in catalogs of import tools.

As soon as all keytops are installed, you can clamp them two at a time in the vise. As soon as the vise is clamped tight, release it and insert the next pair. This method allows you to apply very high pressure with minimal effort, ensuring complete contact between wood and plastic.

Router Step 1: Trimming The Sides

I have referred to uses for the table-mounted router in a number of previous articles. It is one of the most useful shop tools, and I hope to devote an entire article to routers in the future. For now, however, I will just mention a couple of aspects of router design that you should know if you are planning on purchasing this tool just for key recovering.

First, trimming keytops with a router does not require much power. The lowest horse-power router will be more than adequate. However, since routers are capable of a wide range of shop jobs, I would recommend buying a 1/4" router with at least 1HP, or a 1/2" router of at least a 2HP.

Secondly, I recommend buying a 1/2" capacity router if you can afford it. Although most of the bits that you are likely to use are available with 1/4" shanks, bits with large diameter blades cut smoother and are safer to use if they have 1/2" shanks. There is also a better range of bit designs available in 1/2" shanks. There is no disadvantage to 1/2" routers, other than price, since they always come with a reducing collet to accept 1/4" bits as well.

Finally, I would look for a router that has a collet (the chuck that holds the bit) with multiple slits. Look for a collet that has five or six sections; these hold the bits most securely and accurately. Some routers use a collet that is just a steel sleeve with only one complete slit to allow it to compress around the bit. Although there are usually two other shallow slits in these collets, this design is too rigid to conform well to the bit. This allows the bit to slip into the collet during heavy work, galling its shank. These designs also tend to have more run-out than collets with multiple slits, so the bits wobble more.

Once you have your router, either build or buy a router table for it. Tables are available from a variety of sources, as are plans and kits to build your own. The first step in trimming the keytops is done with a veneer or laminate trimmer bit, as shown in figure 3. This bit has a ball bearing on one end that is the same diameter as the blades. This bearing rides against the surface of the wood, and the blades cut off anything (in this case plastic keytop) protruding beyond the wood. This operation trims all of the overhanging edges, with the exception of the notch area where the head meets the tail; the notches are trimmed in the second router operation.

To adapt your router table to keytop trimming, you need only add a small raised platform as shown. This trimming platform serves two functions; First, it elevates the key so that as the key is pushed along the bit, the key button clears the router table. Secondly, the platform may be beveled to allow the key to tilt slightly, thereby placing the keytop closer to the cutters for a "closer shave." *This bevel is only necessary with some router bits*, for the following reason. Some laminate trimmer bits have a blade diameter slightly smaller than the bearing diameter. This causes them to leave the plastic protruding slightly, rather than flush. If your bit does not trim the plastic flush with the key wood you can bevel the platform using the rotary planer in the drill press, with the drill press table tilted about one or two degrees. Some bits *will* cut perfectly flush, and do not need a beveled platform.

Drill a 3/4" hole for the bit, centered no more than 3/4" from one edge of the platform. This allows trimming of spinet keys, which may have the keytops running almost all the way back to the key buttons. Install two dowels in the platform so it can be simply dropped into corresponding holes in the table when you are ready to trim keys. The top surface of the platform is covered with smooth heavy cloth or denim to prevent scratching of the keytops.

To trim the keys, set the height of the bit so that the cutters are only slightly higher than the thickness of the plastic. Then guide each key along the ball bearing, moving the key in a direction against the rotation of the bit. Even if you do not see any plastic overhang on a key, trim it anyway because the cutters will clean off any glue residue. If you are using one-piece tops with fronts, stand the key up on end and use the same procedure to trim any overhang of the key end.

This trimming operation goes very fast — less than 10 minutes to trim all 52 keys. It is also quite safe since the ball bearing shields the cutting blades. There are only two mistakes you can make with this operation: First, you must guide the key away from the bit when the bearing reaches the front end of the key or the notch area. If you do not, the bearing will simply roll around the corner and eat off the lip overhang or the corner of the notch. Secondly, you must look out for lead holes or worn spots along the sides of the keys. Remember that the bearing is following the surface of the key wood, so that if it rolls into a hole the plastic will be cut in the same profile. Normally lead holes are not a problem as long as the bit is set as low as possible. Fronts of keys dug out by fingernails just have to be avoided and trimmed later with a file.

Plastic shavings will deposit on the trimming platform and can cause scratching of the keytops if they get too thick. To avoid this, I hold a small hairbrush in one hand while trimming, and give the platform a sweep with it between keys. There is no need to turn off the router for this because the bearing on top of the bit shields the bristles from the cutters.

Next month I'll conclude with trimming the notches, hand filing and cleaning, and installation and trimming of the sharps.

GOOD VIBRATIONS

Pinning And Finishing The Bridge

Nick Gravagne, RTT
New Mexico Chapter

Readers of a monthly technical series are prone to experience a disturbing loss of continuity (a.k.a. "brain-cell-leakage" not unlike that of a leaky dry-cell). "Where did I leave off last time?" is the first question. "Did I even read the last installment?" is the next. "Will this current issue make enough sense by itself, or do I need to review last month, assuming I can find last month's *Journal*?" We've all been there. Over the years, this "Good Vibrations" column has dealt primarily with the subjects of soundboards, downbearing, and bridges — components and settings which constitute the primary apparatus of the singing piano, yet represent the most neglected or misunderstood aspects of piano rebuilding. My goal has been to shed some light on these subjects as to the theory and practical methods available to us. But with the passage of time, compounded by the discontinuity of monthly installments, some of the information has understandably dimmed into a purple haze. The aim of this article is to recap and summarize what I think are the key points.

The Soundboard

In order for the soundboard assembly to do the job of making useful the energy of the vibrating string it must conform to at least three criteria: 1) it must be lightweight for flexibility, yet rigid enough to vibrate as a complete unit so as to encourage the fundamental to speak; 2) the board and the case must be strong enough to sustain the 1,000 pounds (plus or minus in the average-sized grand) of compressive downbearing force plus a relative outward thrusting force, and do so over a reasonable lifetime; 3) it must have crown — that upward arch or curvature — in order to aid controlled vibrational behavior (as opposed to uncontrolled and independent flutter), and in order to mechanically resist the crushing force of downbearing. In short, crown tends to allow the criteria of one and two to operate.

Crown

In general, crown is imparted to a soundboard primarily by the ribs, secondarily through ambient expansion of the panel (the spruce sheet) which has been artificially dried down or "preshrunk" prior to ribbing, and thirdly through gluing to a rim or rasten which is not flat, but rather has a bevel cut into it which roughly conforms to the crown radius. Soundboard crown exists naturally across the panel grain, while any significant crown along the grain, i.e. parallel to the long bridge, must be artificially introduced through gluing to the rim as well as by the practice of attaching a rigid, hardwood bridge which has a hollow-cut on its underside. The installed soundboard thus takes on a noticeable and measurable spherical condition which, along with the case as a foundation, is amazingly strong yet responsive to the minute shocks of string vibration.

Many old soundboards lose crown (assuming they had an abundance of it to begin with) due to material deformation brought on by the constant battle against downbearing. There is also a tendency of the case, massive though it is in the better instruments, to widen or spread apart under the ever-present exertion of the outward thrust bearing on it, also the result of downbearing. As I have often demonstrated in my classes with the aid of visual devices, and as can be easily verified mathematically, the case only has widen by 0.020 inch (or less) in order to destroy crown.

Crown, as we understand it to have been originally imparted to the soundboard, cannot be re-introduced by any process of "re-crowning." That isn't to say that several re-crowning techniques don't exist — gassing the board with ammonia gas, jacking the board up prior to shimming, kerfing the bridge and wedging same, kerfing the ribs and wedging same, etc. But none of these, allowing that they will work at all, can impart crown to a soundboard assembly according to the original crowning methods; they are, rather, expedients designed to raise the belly of the board above a flattened condition in order that downbearing may once again be made positive. That these techniques deserve to hold an honorable place in our repertoire of shop magic is at least debatable when considering those instruments we classify as second or third-rate to begin with; it is generally agreed, though, that first-class instruments afflicted with flattened, collapsed, or seriously cracked soundboards warrant new board replacement. Soundboard replacers often tell stories of having measured a board which appeared to have minimal crown, only to remove it and watch it reverse-crown to an astonishing degree.

The Standard 60-Foot Radius Crown

The upward curvature of soundboard crown is based (give or take) on a circle having a 60-foot radius. That is, the small arc represented by a soundboard rib theoretically exists as part of the circumference of such a circle. The only thing "magic" about a 60-foot radius soundboard is that it works both acoustically and mechanically. The piano soundboard represents in piano technology the great "empirical science," meaning of course that the "science" of soundboard design — particularly its ribbing and panel thickness — has been (for the most part) experimentally de-

termined.

A 60-foot radius insures against one possible fatality — the flattening out, or near so, of a new and flexible soundboard under the load of downbearing (assuming the bearing angle is set at 1.5 degrees). The reason for this, simply stated, is that there exists in the soundboard more upward arch than can possibly be flattened out by downbearing, even if the tensioned strings were found to have pushed the board down to what appeared to be a minimal downbearing reading as measured at the bridge.

Now does all this suggest that the use of some other radiused soundboard — say based on 45 feet or 70 feet — means that one of the Ten Commandments of piano building has been violated? Of course not. The 60-foot rule-of-thumb signifies an industry average, though it is usually not stated as a hard number by the manufacturers. If we must have a law to guide us it might read like this: "Thou shalt not introduce into the soundboard a crown which is neither unduly excessive for the purposes of strength and vibrational requirements, nor such a light crown as to invite vibrational flutter or mechanical collapse." True, Moses tended to be more precise than this. But then, Moses wasn't a piano builder.

Downbearing

Again, there are no definitive statements here. Piano makers have evolved various and ingenious methods (if not downright cumbersome and mysterious at times) for setting bearing on the bridges. Oftentimes, however, these methods do not directly translate into shop practices which satisfy today's growing tribe of erudite piano rebuilders. So, according to the authoritative sources as cited in this series over the years, and considering the general reasonableness of their (and my) arguments, suffice it to say that the downbearing angle is typically set at 1.5 degrees. The angle itself can be defined as the downward departure of the speaking length of a string as it crosses over the bridge. A 1.5 degree departure is small, but at string tensions averaging 160 pounds the aggregate compressive force on the soundboard amounts to about 1000 pounds — the magnitude of which supports a tacitly agreed-to premise that the aggregate downbearing force should approximate 1/40th of aggregate tension.

Uniformity Of Bearing

Steinway, in its published works regarding the diaphagmatic soundboard design relative to downbearing, advises that uniform downbearing in terms of angle and pressure on the soundboard assembly should be considered a kind of ideal. Under such a plan it can be imagined that universally stressed system implies a three-fold advantage: 1)a more uniform tonal response; 2) in general, uniform stressing of components in all sorts of machinery, such as the clutch plate in a car, is known to increase the useful life of the individual component as well as that of the entire system in which it operates; 3) uniform soundboard stressing should encourage stabilization of piano tuning., especially through those annoying ambient swings. Makes sense to me.

As a practical tidbit, and assuming you know how to apply the downbearing string-test on the *unstrung* piano (i.e., carpet thread, fish line, etc.), read on. A common question goes like this: "When pulling the test-string taut and carefully lowering it until it just makes contact with the bridge top, how much space (dimension) should theoretically exist between the test-string and the top of the rear string rest (duplex bars, or whatever)? Answer: for a desired 1.5 degree angle, multiply the rear string length — as measured in inches from the *front* bridge pins to the rear string rest — by the factor 0.026. (If the desired angle is one degree, the factor is 0.016). Example: the rear string length measures, say, 10 inches in the tenor scale, and a 1.5 degree angle is desired. The dimension between the test-string and the top side of the rest should be 0.260 of an inch (found as 10 times 0.026). Now, obviously, as the rear lengths get shorter, the test-string-to-rear-rest dimension gets smaller — *but the angle and pressure on the soundboard for every string is the same.*

Crown And Bearing In Old Soundboards

The above string-test as applied in an old piano will rarely reveal a full 1.5 degrees of downbearing due, almost invariably, to loss of soundboard crown. If you could snap your fingers, and thereby summon back all that dissipated crown, the minimal downbearing readings would become quite positive. Another common question regarding bearing on an old soundboard goes like this: "Given that the board is flatter than it was when new, how much downbearing can one get away with?" Rule-of-thumb answer: Don't apply more downbearing on the soundboard than there is crown in the board to accept it. If, for example, the old soundboard still boasts an upward arch of 3/16" (a lot for an old board) at the center of its longest rib, then the downbearing dimension should not exceed 3/16" in that general vicinity of the scale, even if the theoretical dimension for some chosen angle of bearing indicates more than this. Although an arbitrary rule, it is not only sensible, but it avoids the blind setting of excessive downbearing on a board which is too flat to handle it.

It follows from this that a soundboard having no measurable crown, hence no appreciable bearing readings, has died of old age. On cheap pianos you're on your own as to what to do: But on valuable pianos, such sleeping soundboards should be replaced with young tigers boasting ample bellies.

Bridges

Pretty straight forward here. Pins must be tight, and notching must sharply define the termination point at the bridge. On a bridge that was not originally notched with a deep and rounded carving, the termination point of the speaking string, which should coincide with the left-to-right diameter of the bridge pin, creeps forward, thereby confusing the string by giving it two effective lengths. The result — as in any form of double-standard system — is a vacillation, confusion, noise, and an absence of resolution. In the piano, we call the phenomena false beats; in society, strife and hypocrisy. To rectify, the pins need to be pulled and the notches re-cut. The problem of poor termination generally exists in the higher treble areas only.

The Bridge Roll

Not a breakfast snack or drummer's rudiment. Can a bridge tip forward, i.e., towards the tuner? This depends primarily on the strength of the soundboard (ribs in particular) and how

tall the bridge is. The forces that tend to contribute to bridge roll, however, are present in the modern piano. It has been shown, and is generally agreed to, that the tension in the rear string segment is lower than the speaking segment by something like 10 pounds, conservatively. By itself, this is insignificant; but in the aggregate this tension differential amounts to better than 2,000 pounds of pull on the front side of the bridge which is not being offset, or countered in kind, by pull on the back side of the bridge. Now if the bridge sits at 1.25 inches above the soundboard, we have a short lever arm on which that 2,000 pounds is acting; hence, 2,000 times 0.104 feet (which is 1.25 inches transposed to feet) equals 208 foot-pounds of force tending to rotate the bridge forward and down.

Many bridges, or more correctly soundboards, fight a valiant battle against deformation, but eventually give out. The tendency worsens in an older piano that receives frequent (or more than its fair share of) pitch raises — and these where the natural slipping of new steel to clean bridge pins to graphited top has been compromised by age. The result is a tipped bridge accompanied by a "sine-waved" soundboard. The effect will be more pronounced in the higher sections of the scale where the bridge tends to be more at a right angle to the pull of the strings. Presumably, soundboard assemblies having deep ribs (approaching one inch), thicker panels (approaching a full 3/8"), beefy bridges, and ribs which are limited in length by cut-off or dumb bars are somewhat immune to the disease since their constitution is strong enough to fight off infection.

Setting The Plate

As in most complex studies of any subject there exists an interdependence of function and component interaction regarding the bellying system in a piano. Where there is adequate crown accompanied by judicious plate setting (hence downbearing setting as oversimplified), conditions are "go" for the energy of the string to optimally transfer to the soundboard. But although the interdependence and interactions of crown-to-bearing-to-plate-to-action criteria are sacrosanct, the individual placements and settings are not. Within reasonable parameters plates can be lowered or raised, bridges can be planed down or built up, soundboard crowns can depart more or less from typical, and action requirements, particularly hammer boring distances can be changes to suit a different string level. What must be avoided (other than gross departures precipitated by ignorance or bull-headedness) is the changing or setting of one of these factors to something "perfect", but at the serious expense of another factor which has been left out of the equation. This has already been touched upon in the previous discussion on crown and bearing.

For me, a recent case in point went like this: a 1954 Steinway M came into the shop needing a new pinblock. The soundboard had no cracks, no distortions (bridge roll), and there were no cracks in the bridges. Moreover, the soundboard indicated a vibrant and resilient life as evidenced by the obvious and sustained "boom tone" of the unloaded board. The only problem was that downbearing was too light and even flat — as measured both under tension, as well as in the unloaded state — due to some loss in crown. What crown did exist, however, was reasonably uniform beginning in the center areas with about 3/16" upward deflection and tapering off to 1/32" to 1/16" or so at the tail and high treble. The three choices for increasing downbearing include: 1) replacing the soundboard with a more fully crowned one which has the original bridge attached; 2) retaining the original board but recapping the bridges to a higher setting; or 3) lowering the plate on the original board and bridges. Considering the excellent condition of the original board and bridges, choices one or two made no sense to me or, I might add, to my customer after the conditions were explained. The plate was lowered (canted to the bass side) by about 1/16" in the bass and 1/32" in the treble. The original reshaped hammers, which are tending to overcenter due to their shorter lengths, were now closer to "center striking;" even so, should new hammers be in the cards some day, the boring distance may need to be shortened.

All things considered I believe I did right by my customer, and my standards. Having said this I should point out that existence of certain rebuilders that argue vehemently against plate fudging in any form, or under any circumstances. Most rebuilders of this school are known far and wide for their unimpeachable work. Still, in my view, they also exhibit tendencies towards extremism and inflexibility — yet to a degree understandable considering the license taken by ill-prepared and equipped "rebuilders" who routinely lower plates, or greatly flex them at the hitch areas, prompted by no other criterion than a lack of bearing. At any rate, these points are at least debatable, and there exists plenty of room for open and informed discussion.

Summary

We do well to remember that in life, economics, social policy, the environment, and piano technology that for every action there is an opposite and equal reaction. As already stated in this article, the notion of the interdependence and interaction of the piano's tone generating and amplifying system is critical to one's thinking if proper diagnostics and cures are to be forthcoming. It is also important to realize that the optimum relationships (if in fact these are scientifically discoverable) of soundboards to plates, and downbearing to tone are essentially *mechanical* in nature; i.e., they are physically related and adjusted to each other. That this physical arrangement hopes to produce a satisfying tone quality is to the rebuilder a secondary issue; but to the piano designer it was a primary issue.

The rebuilder's concern is to assess — through actual measurement, through educated ears and hands, and by theoretical standard — the physical condition of a piano. Following this, everything that does not conform to those standards must either be scrapped, adjusted, replaced, repaired, or otherwise made right. Having done all this, tone, which is inherently a function of design, is enabled to "be all that it can be." No magic. To the credit of many of today's rebuilders who are ever striving for that next rebuild to be the "mother of all rebuilds," more pertinent questions are being asked than ever before; better practices, materials and skills are being brought to bear, and the level of rebuilding is slowly but steadily rising.

AT LARGE

The Cost Of Doing Business

Larry Caldwell, RTT
Nebraska Chapter

In 1989, when I decided to re-enter the Piano Service Business, I was referred to the Small Business Administration (SBA) Service Corps of Retired Executives (SCORE). I received valuable information as well as numerous booklets containing information about starting out in business, budgeting, pricing, inventory, advertising, etc. Even though I had previously been in the piano service business for several years, I found this information extremely useful. In the information following I will excerpt material from various SBA publications concerning costs involved with operating a small business.To prevent failure, the two most important factors are first, experience and management capability; and second, enough capital to operate the business through the first six months.

The four main elements you must consider when setting a price for your service area; 1. Materials and supplies, 2. Labor and operating expense, 3. Planned profit, 4. Competition.

Materials and supplies can mean a little or a lot, depending on whether you acquire new or used equipment, have a store or shop, or work mainly in the customer's home, building or place of business.

Transportation is going to be one of your main expenses in this category. (See "Costs of Getting to the Job" by Larry Caldwell; January 1990 *Journal*, pg. 8) It seems that the 30 cents per mile figure is the usual rate used by service businesses in my area of the country.

Tools can cost anywhere from a few hundred dollars to several thousand dollars depending on whether you have a shop or work from what you carry with you. Some technicians have computers to help with bookkeeping, etc. Some have power tools in their shops, some have electronic tuning aids that add to the cost in this category.

Whether you have to supply a shop or carry a variety of parts with you, the money you have invested in a parts inventory is another entry under the expense column. Office supplies should also be included in this column.

Labor and operating expenses are two other large items to consider. You must determine what your labor rates will be from the information available to you. Operating expenses start with a percentage of your home used for business or the cost of leasing or buying a shop. (See "Your Labor-A Business Expense" by Carl Root, April 1989 *Journal*, pg. 36)

Advertising is an expense that if handled correctly can end up paying back at least part of the costs. Some of the things advertising should do are tell the customer why they should use your services, and how your service differs from the competition. Target customers in your advertising such as: Is your service mostly tuning in the home? Do you rebuild or do shop work? Do you work on player pianos? Do you do regulation work?

I could not operate without a telephone and I do not think too many of us could. You can get by with just a residence phone which is the least expensive, but if you use yellow page advertising, you will probably be required to have a business phone which is a higher rate.

Some insurance is necessary. How much and what kinds are your decision. A sample of what is available is as follows: 1. Automobile, 2..Medical/Health, 3. Disability, 4. Tool and Bailee, 5. Liability (business), 6. Life, 7. Homeowners and/or shop building and contents.

Automobile insurance is required by law in Nebraska and I would imagine that this is true in most places. The cost varies according to types of coverage, miles driven, and percentage of business/personal use.

Medical/health insurance is worth shopping for. Individual policies can cost from $75 per month per person covered. Group policies may be a little less. Policies have varied coverages, deductibles, limitations and premiums. Study companies carefully and compare. (See "How Good is Your Health Insurance," by Janet Leary, September 1989 *Journal*, pg. 34)

Should a sole proprietor with no employees have disability benefits? If you can afford it, it is a good idea. It makes sense to protect your income if you are unable to perform your regular duties. Ask your insurance agent about various plans.

Tool And Bailee insurance may be something you need, especially if you cannot have physical control of your tools and equipment a good percentage of the time. Also, business liability insurance is a must if you are at all concerned with moving pianos from customer's location to shop or covering accidents that might occur while you have physical control of a piano, either in the customer's home or in your shop.

Life insurance is a personal matter, but may be necessary to cover expenses in case you are no longer living. Home mortgage, children's education, final expenses, legal fees, unpaid bills are all items that life insurance can assist with to relieve the burden on remaining family members.

Homeowners and/or insurance on shop building and contents is essential. If you work out of your home and use a certain percentage of your home as office and/or shop, you should figure these costs as business related. If you have a shop building including contents, this should be covered also.

Bookkeeping or accountant fees as well as any legal; fees should be entered in the appropriate place. Accounting for expenses, etc. is a necessity, however, and attorney may or may not be needed. (See "Basic Accounting" by Janet Leary, March 1988 *Journal*, pg. 32)

Taxes and interest paid on business related items is another consideration. Investments for future growth, education or retirement should be an item of concern. Continued education, professional dues, local, regional and national seminars are expenses you don't want to forget.

You should plan what your profit is going to be and determine how to deal with competition. Are you offering evening and Saturday appointments? Are you covering an area smaller, about the same, or larger than your competitor? Do you offer discounts for more than one piano at any location? (See *Update*, September 1990 *Journal*, results of PTG survey, Question #49, pg. 22/U6)

I found it very interesting to compare my personal responses to the survey with the results. I find that I am with or close to the majority response on many of the questions. I did not find this true however, when I compared my cost factors with the worksheet from the SBA aid. (See figure 1) I believe that determining what percent of your gross income is spent on advertising, telephone, transportation, etc. is something your accountant or bookkeeper can help you with. Do like the artillery would do "Fire and Adjust."

Figure 2 is an example of the percent of service income that I spent on each item. I was not in business for a full calendar year in 1989. These (%) figures were obtained by dividing the actual; cost in dollars by service income. The resulting figure will be a decimal which I converted to percent. One item that I did not include in figure 2 was income and self-employment tax. My accountant tells me that a ballpark figure would be 30 percent of net profit for this item. (See "Tax Topics, by Janet Leary, May 1989 *Journal*, pg. 34) According to George Smith's "The Tax Adviser" column in our local newspaper, self-employed individuals are entitled to a new income tax deduction equal to one-half of their self-employment tax liability. This became effective January 1, 1990, and could help lower the 30% of net figure.

I have used percentages because of the fact that dollar amounts vary from one area of the country to another. I intend to compare 1990 with my 1989 figures/percentages and "Fire and Adjust" as necessary. ■

References

U.S. Small Business Administration Management Aids:

#2.022 "Business Plan For Small Service Firms"

#2.025 "Thinking About Going Into Business?"

#2.026 "Feasibility Checklist For Starting A Small Business".

1989 Annual Expense By %

Telephone (including yellow page adv.)	14.7%
Utilities	3.7%
Automobile	27.7%
Office	1.1%
Advertising and Postage	10.3%
Lodging	5.6%
Dues and Fees	4.2%
Medical	4.3%
Personal	2.7%
Misc.	11.7%
	86.0%
Net Profit	14.0%

Figure 2

Expenses Worksheet

Worksheet

Sample Figures for Repair Services* Percent of Sales	% of Your Sales	Your Dollars JAN	Your Dollars FEB	Your Dollars MAR	Your Dollars APR	Your Dollars MAY	Your Dollars JUN	Your Dollars JUL	Your Dollars AUG	Your Dollars SEPT	Your Dollars OCT	Your Dollars NOV	Your Dollars DEC	Your Annual Sales Dollar
Sales	100%													
Cost of Sales	47.51													
Gross profit	52.49													
Controllable expense														
Operating supplies	1.82													
Gross wages	16.98													
Repairs and maintenance	.38													
Advertising	1.45													
Car and delivery	1.52													
Bad debts	.04													
Administrative and legal	.74													
Outside labor	1.21													
Miscellaneous expense	.81													
Total controllable expense	24.95													
Fixed expense														
Rent	3.35													
Utilities	2.05													
Insurance	.95													
Taxes and licenses	.86													
Interest	.12													
Depreciation	1.25													
Total fixed expenses	8.59													
Total expenses	33.53													
Net profit	18.90													

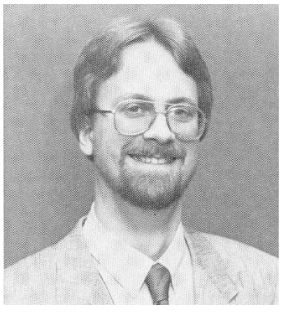
* These percentages are taken from Barometer of Small Business, Accounting Corporation of America. These figures are presented only as a sample and refer to repair services with an average annual gross volume of under $50,000. The percentages vary from one business to another.

Coming Events

May 3-4, 1991	**Intermountain Seminar** SLC Airport Holiday Inn, Salt Lake City, UT Contact: Wilford Young; 975 Stone Drive; Ogden, UT 84404 (801) 393-9079
May 5, 1991	**South Florida One-Day Seminar** Hale Pianos and Organs, Pompano Beach, FL Contact: Bob Mishkin; 1240 NE 153rd Street; N. Miami Beach, FL 33162 (305) 947-9030
May 23-26, 1991	**Mexico City** Ollin Yolisli Cultural Center, Mexico City Contact: Danny Boone; 9707 Timberview; Waco, TX 76710 (817) 772-0546
July 13-17, 1991	**34th Annual PTG Convention & Technical Institute** Adam's Mark Hotel, Philadelphia, PA Contact: PTG; 4510 Belleview, Suite 100; Kansas City, MO 64111 (816)753-7747
October 3-6, 1991	**Ohio State Conference** Truman Hotel, Columbus, OH Contact: Don Gagliardo; 752 Macon Alley; Columbus, OH 43206 (614) 444-9630
October 11-13, 1991	**Texas State Association 1991 Seminar** The Crest Hotel, Austin, TX Contact: Mary Smith; 2002 Oxford Avenue; Austin, TX 78704 (512) 462-0212
October 17-20, 1991	**1991 New York State Conference** Sheraton Inn, Buffalo Airport Contact: Robert Tarbell; 358 Bedford Avenue; Buffalo, NY 14216 (716) 873-5465
November 8-10, 1991	**North Carolina PTG Conference** Adams Mark Hotel, Charlotte, NC Contact: Eugenia Carter; 4317 Commonwealth Avenue; Charlotte, NC 28205 (704) 568-1231

MEMBERSHIP

What's A Sponsor To Do?



Bruce G. Dornfeld, RTT
Vice President

When joining PTG, each application requires a sponsor. While a few chapters have written requirements for a sponsor, most do not. The only official action required by all sponsors is a signature. Hopefully, this is not all the sponsor will do.

Some chapters have the sponsor introduce the applicant to the membership, or to their board as part of an interview. After acceptance into membership, the need for a sponsor continues. If the associate has aspirations to become an RTT, an RTT sponsor can be very helpful. A sponsor can answer many questions about the RTT exams and other Guild related items. Screening for the exams can be done or arranged by a sponsor. A sponsor should be able and willing to give guidance if not actual instruction. He or she should remind the new member of the importance of regular attendance at chapter meetings and suggest seminar classes of an appropriate level.

If you are a sponsor, are you in regular contact with your charges? If you have not seen them for some time, a phone call or quick note might let them know they are important, and might help keep them active and involved. Remember: the signature on the application is not the end of the sponsor's responsibility to the incoming member or to the chapter, it is just the beginning.

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1990-91 Booster Club

PTG's Booster Club is composed of those who sponsor one or more members each year. The members below will be honored during PTG's upcoming convention in Philadelphia, and top recruiters on the list also will be honored as members of the President's Club. A special Restorers Club honors those who have sponsored a former Registered Tuner-Technician back into the Guild.

Bob Perkins 7
Norm Heischober 6
Randy Potter 6
Karl Roeder 6
Tom Graves 4
Jack Stebbins 4
Don Valley 4
Lee Hintz 3
Christopher Johnson 3
Walter Meissner 3
Don McKechnie 3
Doug Neal 3
Bob Stephenson 3
Sid Stone 3
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Willem Blees 2
Brian Catell 2
Orville Braymer 2
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Denele Campbell 1
Harry Cardwell 1
Vince Chambers 1
J. Sam Corbett 1
Diane Cottrell 1
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Leroy Fritz 1
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Henry Jones 1
Owen Jorgensen 1
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Dennis Kurk 1
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Kevin Leary 1
Vincent Maccaro 1
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Allen Wright 1
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AUXILIARY EXCHANGE

President's Message

The long winter is over. We have gotten past the mud, sleet, snow and rain. The crocuses, daffodils and hyacinth have cheered us with their bright, colorful dance and are now storing up sunshine taken through their foliage to bring us another cheerful parade next season. The events of Desert Storm in Kuwait and Iraq seem to be safely behind us, with our armed service personnel, who were prisoners of war, released and hopefully by now, a good portion of the United States troops, our brave young people who were involved in the Gulf War, returned to our nation's shores and to the arms of loved ones and family.

A non-denominational chapel service will be held Sunday, July 14, at 7:00 a.m. at the convention in Philadelphia. Francis and Helen Hollingsworth of Dayton, OH, have graciously consented to coordinate this service. I am sure many of us will want to take advantage of this opportunity to address concerns, whether our own or worldwide, and to give thanks for the early cessasion of hostilities.

Please remember to get your reservations in soon for the Auxiliary Tour of Philadelphia and Boat Trip. Buffet lunch will be served on The Spirit of Philadelphia as part of this package tour, and there is a cut-off date of June 25, I believe, for reservations and payment in order for the boat part of the tour to accommodate us for lunch.

Arlene M. Paetow

Getting Ready For Council

This month's column is devoted to matters that will come before Council in July. In addition to the proposed bylaws amendments, a proposal for Honorary Life Membership has been put on the agenda by the Cleveland Chapter and is being published here in accordance with our bylaws.

Dear Friends,

The Cleveland Chapter of the Piano Technicians Guild Auxiliary would like to propose Honorary Life Membership for Julie Berry. Julie has always offered her support, ideas, and help to our organization. Many hours were donated towards the forward progress of our Auxiliary. The following is a short biography of Julie's contributions:

Julie joined the PTG Auxiliary soon after Ron, her husband, was admitted as a member of the PTG. In 1977, she was one of the founding members of the Indianapolis PTGA chapter, presiding over the organizational meeting and serving as the chapter's first treasurer. Later she served as president, secretary, delegate, alternate, and seminar coordinator for Auxiliary activities.

Julie became active on the national level at the same time. At the Dallas convention in 1977, she was appointed to the newsletter committee. In 1979, she spearheaded the Indianapolis Chapter's contribution to the PTGA Idea Book, "Easy Does It," by typing the book and organizing the book assembly party in her living room.

In 1979, Julie was elected first vice president of the Auxiliary. She served as president during the 1982 Silver Anniversary convention in Washington, D.C., and the 1983 convention in New Orleans. During this time, and for a time thereafter, she also served as editor of the Auxiliary Exchange column in the PTG *Journal*, a job which she resumed in 1990, so the Auxiliary could have more time to find a replacement. She also served the Auxiliary as its newsletter editor. At home Julie enjoys writing and works as a freelance editor for a publishing house in Indianapolis.

After Julie left the PTGA Board, she concentrated on serving as her husband's moral support and part-time secretary as Ron served on the PTG Executive Board. During this time Julie and Ron began their long-awaited job of parenting, a job which they thoroughly enjoy. As the mother of two young boys, Julie has increased understanding of the needs and desires of people who come to annual conventions with their families. She has worked to help the child care committee explore the best way to meet the babysitting needs at our conventions.

Julie has served on the Nominating Committee. She has chaired open discussions about the Auxiliary at annual conventions, has taught business classes to both the Auxiliary and the Guild, and has made herself available to help the Auxiliary in any way she can. Yet, when asked about her service to the Auxiliary, she is quick to add that she has received more than she has given to the PTG Auxiliary.

A member such as Julie is a great asset to our Auxiliary, and we, the Cleveland Chapter, would be happy if our Council in Juiy would vote Honorary Life Membership to Julie Berry.

Thank you,

Ginny Russell, Cleveland Chapter

PTG Auxiliary Executive Board

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Start planning now !
for the 34thAnnual Convention at the Adam's Mark in Philadelphia, July 13-17, 1991

Piano Technicians Guild Auxiliary Bylaws

Article I — Name
The name of this organization shall be: "Piano Technicians Guild Auxiliary."

Article II — Goals And Purposes
The principle purpose of this Auxiliary is to support the Piano Technicians Guild and its members; to develop understanding, goodwill and support in the music world and to promote music education. Plan and develop the Auxiliary Program for the Annual PTG Convention.

Article III — Membership
Section 1. Membership is open to anyone sixteen years of age or older who is sponsored by a member in good standing of the Piano Technicians Guild, Inc. All members have the same rights and privileges.
Section 2. Each member is obligated to observe the laws of PTGA and of the chapter in which membership is held. A member shall be in good standing when all dues and fees have been paid as required by the PTGA laws and Standing Rules.
Section 3. Any group of three or more members meeting the requirements of Article III Sec. 1, who reside within the chapter jurisdiction of a PTG chapter, may form a chapter of PTGA by following the procedures in Standing Rule #2.

A member may join any established chapter or, if there is no chapter in the area, may join as a Member-At-Large.

No person may be a member of a local chapter without also being a member in good standing of PTGA at the International level.
Section 4. Council may confer Honorary Life Membership upon a member who has rendered outstanding service to PTGA. Nominations for such memberships should be made following procedures set forth in Standing Rule #4.

Article IV — Officers And Executive Board
Section 1. Officers shall be president, vice president, recording secretary, corresponding secretary and treasurer. These five officers, together with the immediate past president, shall constitute the PTGA Executive Board.
Section 2. The Executive Board shall be empowered to fill vacancies that occur on the Board except for the office of president and immediate past president. In the event the president is unable to perform the duties of office the vice president shall assume the office for the remainder of the term. Vacancies in the Board position of immediate past president shall not be filled. A president who does not fulfill the term as president shall not be eligible to remain on the Board as past president.
Section 3. The duties of the officers of PTGA shall be as shown in the Standing Rules.

Article V — Terms Of Office And Elections
Section 1. The term of office shall be for one year and commence upon installation at the annual PTG Convention until the following PTG Convention.
Section 2. The president shall require a vote of 75% to hold that office for more than two successive years. Other officers shall not hold the same office for more than five successive years.
Section 3. Voting for all elections shall be by secret ballot unless there is only one nominee for an office, in which case the election may be by voice vote providing the chair has clearly called for further nominations from the floor and found none forthcoming. Council delegates have the privilege to make nominations form the floor for all PTGA offices.

Article VI — The PTGA Council.
Section 1. The PTGA Council shall be the legislative body of PTGA, and shall meet annually during the PTG Convention.
Section 2. The Council shall consist of the PTGA Executive Board and one delegate and one alternate in good standing from each chapter of PTGA that designates one according to the rules set forth in Standing Rule #5. PTGA officers may serve as delegates if they are duly elected as such by their regions or chapters. Members-At-Large may elect one delegate from each of the seven PTG regions during a regional caucus at a time and place designated by the president.
Section 3. Only delegates shall be allowed to vote or make motions. If the delegate is not present the alternate may act as the delegate. When the delegate is present, alternates may participate in debate only with the permission of the delegate.
Section 4. A quorum shall consist of a majority of the delegates present at the opening of the Council session.
Section 5. Amendments to these Bylaws shall require prior notice as required in the Standing Rules and a 2/3 vote. Voting on all other matters shall be as prescribed by "Robert's Rules of Order, Newly Revised 1990."

Article VII — Committees
Section 1. Standing Committees.

Audit Committee to be appointed annually by the president. This committee shall examine the books kept by the treasurer and report as requested by Council.

Scholarship Committee consisting of a chairperson and one other committee member, both to be appointed by the president.

Bylaws Committee appointed annually by the president.

Nominating Committee consisting of two members and one officer elected at the Council session. Chapters may suggest nominees to the Nominating Committee. The duties shall be as listed in the Standing Rules.
Section 2. Special Committees.
Committees may be authorized as needed by either Council or the Executive Board.
Section 3. Committee reports shall be submitted to the president and recording secretary in writing.

Article VIII — Dues
Council shall have the right to authorize appropriate dues and new member fees. New member fees shall be paid on joining the organization. Annual dues shall become due on January first of each year. Dues shall become delinquent if not paid by March 31, of each year. Those delinquent in dues payment shall be considered not in good standing. Members not in good standing cannot receive member rates at conventions; cannot serve as delegates and cannot vote or hold office at international or chapter level.

Article IX — Parliamentary Authority
"Robert's Rules of Order, Newly Revised, 1990," shall govern the organization where applicable and not inconsistent with these bylaws.

Article X — Emergency Provision
Any exception to the procedure for giving notice of proposed amendment to the Bylaws must: 1. First be approved by a 2/3 vote of the Executive Board before the amendment can be submitted to Council. 2. A 2/3 vote of Council in favor of considering the amendment shall be required before it may be placed on the floor for debate and vote. 3. A 3/4 vote shall be required for adoption of the amendment.

Standing Rules

#1. Annual dues shall be $10.00 per year.

The new member fee shall be $10.00 and shall cover dues up to the start of the next year.

#2. When three or more persons have agreed to form a chapter of PTGA under the terms of Article III Sections 1. and 2., they should notify the PTGA president and secretary in a letter giving the names, addresses, and signatures of each member. A chapter charter will then be issued at the next Council session.

#3. Any PTGA chapter or group of three or more Members-At-Large in good standing can make nomination for Honorary Life Member. Nominations from a chapter should be signed by the chapter president and the chapter secretary. Nominations from Members-At-Large must be signed by at least three members. Copies of the nomination should be sent to the PTGA president and recording secretary. It should include a short biographical sketch of the nominees activities in PTGA and arguments favoring the Life Member designation for the nominee.

#4. Council: Chapters desirous of being represented by a delegate to Council should notify the PTGA recording secretary within 30 days prior to the annual convention stating the name of the delegate and alternate. All delegates and alternates must be members in good standing. Council shall have the right to determine whether members without prior authorization may be seated as delegates.

#5. Duties Of Officers
***President:** The President is the presiding officer of the Council and appoints all committees except the nominating committee and the Auditing Committee.
***Vice President:** Shall act as Membership Chairperson and chapter organization, and perform any duties requested by the President.
***Recording Secretary:** Shall record and have custody of minutes of all annual and special meetings of the Auxiliary; properly record amendments to Bylaws and Standing Rules; file all committee reports; keep an official membership roll as furnished by the Treasurer; have available at all meetings a list of all committees and their members; issue delegate and alternate notices, and sign chapter charters.
***Treasurer:** Shall have custody of all Auxiliary monies, and shall record an itemized account of all disbursements and receipts. A written report will be presented at each Board and Council meeting and at such other times as the president may direct. All checks shall require two signatures: that of the Treasurer and President. In the event either of the above is unable to perform this duty the Vice President may constitute the second signature. All special projects shall be itemized and included in the written reports.
***Corresponding Secretary:** Shall conduct all correspondence as directed by the President. Shall secure a Sunshine Committee to represent each region for the purpose of maintaining contact with Auxiliary members. Shall order and disburse Auxiliary stationery requested by Board members and committees.

#6. Standing Committees
Bylaws Committee. Any proposed amendment to the Bylaws or Standing Rules must be submitted to the Bylaws Committee prior to November first of each year to be reviewed and submitted to the Auxiliary *Journal* Editor prior to February first for inclusion in the *Piano Technicians Journal.*
Nominating Committee. The duty of the Nominating Committee is to seek from PTGA membership the most qualified persons to fill PTGA offices. The committee may recommend more than one candidate for an office if they feel those recommended have equal qualifications or may make no recommendation if they feel none of those willing to serve are qualified or are unable to agree on two or more announced candidates. Written consent to serve forms must be obtained from each candidate and submitted to the Recording Secretary.
Scholarship Committee. A detailed description of the duties of the Scholarship Committee appears in the Board Manual.

#7. The Auxiliary shall pay the Auxiliary President's room (if not complimentary) and twenty-five dollars ($25.00) per diem for six days during the annual convention.

#8. The PTGA President shall attend the PTG convention planning meeting. Transportation and lodging shall be paid by the Auxiliary.

#9. The Auxiliary shall pay twenty-five dollars ($25.00) per diem for six (6) days to Vice-President, Recording Secretary, Treasurer, Corresponding Secretary and Immediate Past President during annual PTG convention.

#10. If there is a Past President's Reception at the annual PTG convention protocol shall be determined by the Auxiliary President in office at the time.

#11. (1). Proposed amendments to these Standing Rules must be submitted typewritten in duplicate, one (1) copy to the president, and one (1) copy to the Bylaws Committee no later than four weeks prior to the annual convention. A Standing Rule may then be adopted by a majority vote. (2). In order to amend these Standing Rules without having compiled with Standing Rule #11 (1), a 2/3 vote of the Council is required.

#12. Recommendations of Nominating Committee must reach the Auxiliary *Journal* Editor by March first to be printed in the May *Journal.*

#13. The Executive Board is prohibited from authorizing any expenditure over $500.00 without consent of Council.

#14. In the event the president elects to have a parliamentarian present at Council, the fee shall be determined by the PTGA Executive Board and shall not exceed $150.00

*For expanded duties of officers consult Board Manual which will be furnished each elected officer and chairperson of the Scholarship Committee.

Classified Advertising

Classified advertising rates are 35 cents per word with a $7.50 minimum. Full payment must accompany each insertion request. ***Closing date for ads is six weeks prior to the month of publication.***

Ads appearing in this publication are not necessarily an endorsement of the services or products listed.

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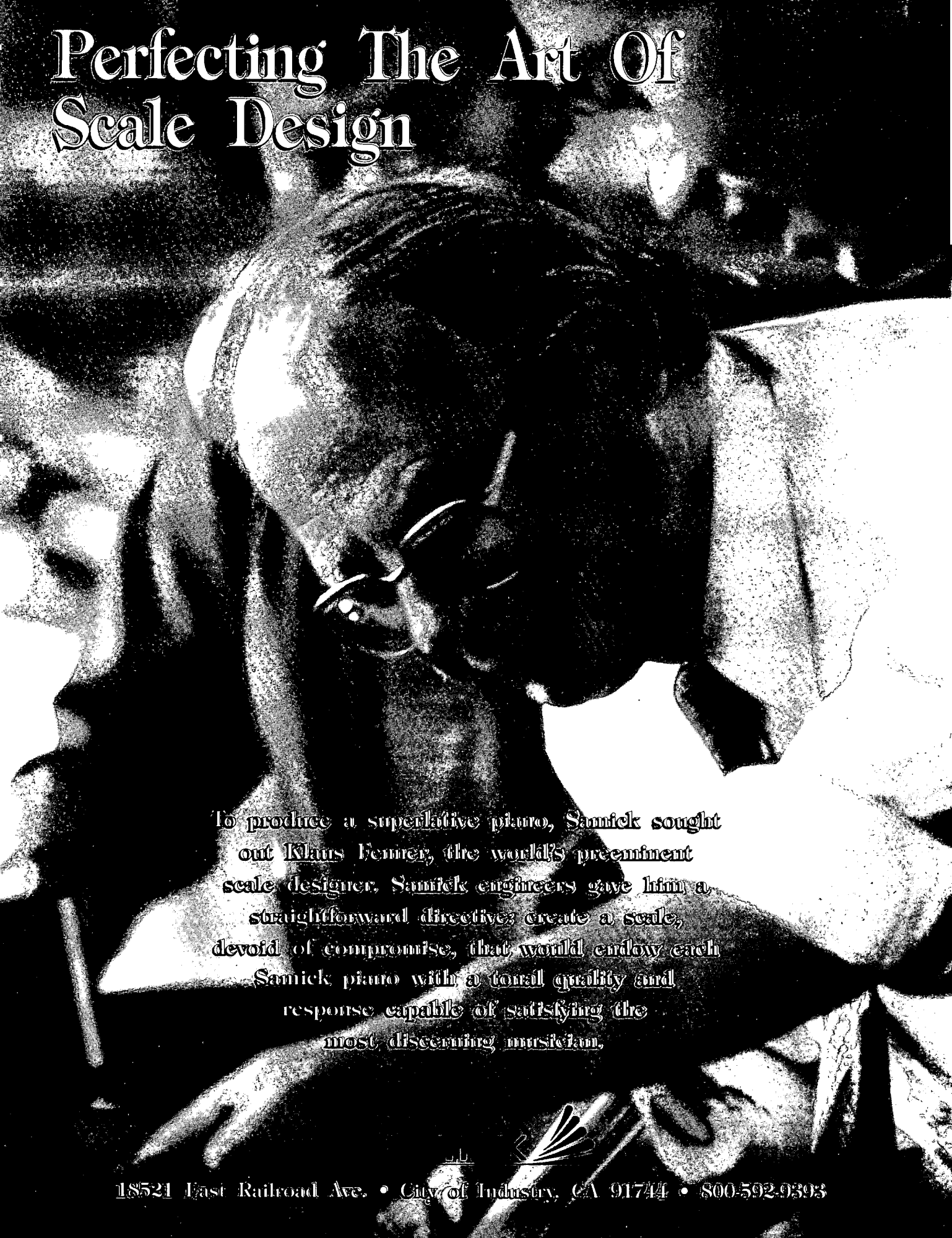

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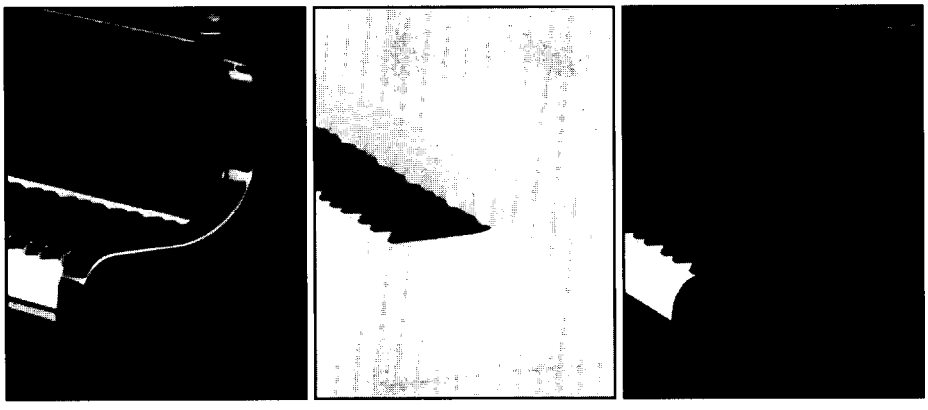
Tech Gazette

Yamaha Piano Service May, 1991

Some Notes on Finishes



POLISHED EBONY, WHITE AND POLISHED WOOD FINISHES

Yamaha Piano finishes that have been on most high-gloss models since about 1976 are high quality polyester. These finishes include polished ebony, polished white, polished walnut, mahogany and rosewood. All of them are extremely durable and designed for easy care. Their makeup is totally different from the more traditional lacquer finishes, and by following a few simple rules, the beauty of the high gloss can be maintained.

First of all, never use a dry cloth for dusting. The dry fibers can put fine scratches into the finish. Instead, dampen a soft cotton cloth with warm water and wring it as dry as possible. This will soften the fibers and will provide basic cleaning and dusting. The finish can then be dried with another soft cloth.

It is also a good idea to polish the finish occasionally. Our own Unicon polish is available through our Piano Parts Department. A new polish for high gloss finishes is also available from piano supply houses. It is very good and easy to use.

SATIN WOOD FINISHES

The Satin Wood finishes are lacquer, so that the care of the piano cabinet is the same as for any other fine piece of furniture. Just about any brand of a cream cleaning polish is good. If you prefer the look of the oil polishes, always remember to wipe off excesses with a clean absorbent dry cloth. Cheesecloth or terry cloth is good. And, with any kind of polish on a satin finish, remember to go with the satin grain, both when applying the polish and when buffing it off.

SATIN EBONY

Satin Ebony finished pianos are made from the same polyester material as the polished finishes. The difference is that instead of being buffed to a high gloss, these pianos are rubbed with steel wool and a rubbing compound. This makes micro-fine "scratches" in the finish, resulting in the satin tone of the finish. Because of the nature of this finish, cleaning might take a little more effort. If a damp cloth doesn't do the trick, add a little cleaning agent, such as dishwashing detergent, to the warm water. From time to time, the finish may take on a cloudy or milky appearance. That simply means that the satin wax, originally applied at the factory, has become somewhat dry. The remedy is to replenish the original oils with another coat of good satin wax to restore the rich satin sheen. Again, keep in mind that satin ebony has a definite, discernible grain. As with the wood-grain in the timber finishes, be sure to rub with the grain when you clean or wax it.

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YAMAHA

IAPBT

NEWSLETTER

Volume 2, Number 1
May 1991

President's Message

Ronald L. Berry, RTT

This is probably the last newsletter that will come to you before the IAPBT meeting in Seoul, Korea. The meeting is June 2-4, 1991. We are looking forward to your attendance. You will find more about this convention elsewhere in this newsletter.

The war in the Persian Gulf brings many thoughts to mind. Wars happen when people find themselves unable to communicate. It seems that when countries start fighting, they fight until everyone is so sick of it that they can then sit down and talk. I can't help but think that people schooled in music and the arts might help avoid wars.

When people make friends with people in other countries, they open themselves to understanding other cultures and languages. It is harder to feel isolated or superior to others when you understand these other cultures.

In this time when Russia and Eastern Europe are opening up and moving toward better communication with the rest of the world, let us pray for a quick end to the Persian Gulf problems. Let us try to help world peace by our activities in music and bringing together technicians from all over the world.

About IAPBT's Officers...

IABPT is built of diversity. That diversity is reflected in its officers. I thought that a personal sketch of each officer would be interesting to all. I will start it in this issue with my own story and we will follow with others in future issues:

Ronald L. Berry, IABPT President

I was born in Indianapolis, IN, USA on January 4, 1950. I graduated from Northwestern University with a Bachelors degree in Philosophy in 1971. I became interested in piano tuning because I had played piano since childhood. I began working for the Indianapolis Public Schools as a piano technician where I received training from John Boukes, head of the piano shop. In 1976 I joined the Piano Technicians Guild as a Registered Tuner-Technician. I left the Public School system in 1979 to set up my own business and be completely self-employed. I do mostly in-the-

Continued on page 2

INTERNATIONAL ASSOCIATION OF PIANO BUILDERS AND TECHNICIANS

IAPBT Convention Near

The seventh IAPBT meeting will be June 2-4, 1991, in Seoul, Korea. This convention will offer a chance to meet technicians from all over the world. Korea has several piano factories and visits to these factories will be part of the convention. In addition to meetings of the IAPBT Board and Council there will be a symposium on the future of the piano presented by representatives from each organization in IAPBT. This format met with great success at the Kyoto, Japan meeting in 1989. The differing viewpoints of each of the countries gave much valuable insight into the piano industry.

The convention will be held at the Walker Hill Sheraton in Seoul. It begins on Sunday, June 2, with registration starting at noon. The Board meeting will be that day with an Opening Assembly and reception that night. June 3 will be the Council meeting and the symposium on the future of the piano. A dinner show and banquet have been planned for that evening. June 4 will be a day of touring the factories. The registration fee (450,00 won) includes hotel for June 2 and 3, and five meals. The Korea Association of Piano Tuners is working hard to have everything ready for our visit.

Those of you in the USA and Canada will find information about a tour of the Orient which will include this convention. Those of you outside the USA and Canada, contact Bo Jung Lee in Korea for registration information.

Bo Jung Lee
#63-4 203 Song Ahm Building
Mo Ack Dong
Jong Ro-Gu
Seoul, Korea
phone 732-2221

See you in Seoul.

Tour Of Orient Set

U.S. piano technicians who plan to attend the IAPBT conference can take advantage of an expanded tour which includes China, Taiwan, Hong Kong, Macau and Korea. Several piano factories are included in the tour, which runs from May 15 to June 6.

For more information, contact Ed Hilbert at (802) 453-3743, or write to him at 40 Pleasant St., Bristol, VT 05443, USA.

Letters

Dear Ronald Berry:

I apologize for not responding to you earlier concerning your request for the IAPBT participation at the 1993 Europiano Congress. However, the negotiation took a long time.

Our French association is responsible for coordinating the 1993 Europiano Convention. Of course it will take place in France. Since France has only one piano factory and it is far away from Paris, the center of things in France, it has taken lots of time to figure out the best plan. Beside that, the French Association thought at first that it wouldn't be in the position of offering you things of interest.

Now it has been agreed that the Europiano Congress in 1993 will take place in three French Cities: Paris, Lyon and south France to include a number of interesting topics and sights.

The IAPBT will be welcome to participate at the Europiano Congress in 1993. Details and dates will follow as soon as available. Would you also please inform us of the additional intentions the IAPBT intends to pursue before or after the above named Congress.

Best wishes and kind regards,
Leonardo Duricic
President of Europiano

Dear Mr. Berry,

Let me first apologize for my late reply which, in this case, is due not only to my normal laziness toward writing and to the lack of time, but to the fact that I delayed until now with a definite purpose in mind.

Yes, I definitely would like you to consider my application for membership in IAPBT and I think the annexed letter from the local Bösendorfer representative plus the additional information should support my request though I'd be happy to supply you with any additional data you might regard as pertinent.

As far as the piano situation in Brazil is concerned, I regret to tell you that the term "pretty bad" is a terrific understatement. The business must be faced as a whole and it is certainly no news to you that this country has for years been facing a severe crisis which has of late been compounded with a growing recession. These facts partly explain the poor quality of the two brands manufactured here and are also in part responsible for the unusually absolute lack of maintenance and the poor services rendered by the overwhelming majority of the few "tooners" in the field.

Now, to the main reason of this — as well as the reason for my delay: I want to ask you for your personal support with PTG, IAPBT, etc., to the fact that after many years, very many trials, I finally managed to convince our Uni-Rio (University of Rio de Janerio) to start next March a regular three-year course on piano technology — the first in South America and maybe (I don't know about Mexico) the first in all Latin America. To that effect I am including a copy of the letter you would have received anyhow as President of PTG.

Considering as well that, up to now, almost no material for the trade is produced in the country and no single item can be looked upon as reliable, we will certainly need and gladly welcome everything from educational aids to tools, materials, spare parts, literature, etc.

Wishing you and the whole of your wonderful team at PTG all the best and lots of success for the new year. I thank you very much in advance and send you herewith,

My very best regards,
José Kalmus
R. Frei Francisco de Mont'Alverne, 41
13080 - Campinas - SP
Brazil

Officers...

home service, but have done rebuilding including new pinblocks.

In 1980, I became examinations committee chairperson for the Guild. The Guild had just implemented a new tuning test. The concept of this test is to have the piano master-tuned by a group of examiners who argue every note until they come to the best tuning possible. That tuning is then measured and entered into the computer. The piano is detuned and then tuned by the examinee. The examinee's tuning is then measured and entered into the computer. The computer compares the tunings and prints out a score. All notes that differ from the master tuning are verified aurally before points are taken off. This test standardized exams throughout the USA and Canada. A major part of my job was to write a manual for the exam and train examiners to give the test. (We also require that our examiners pass the tuning test at a 90% level instead of the 80% level required for Registered Tuner-Technician.) Everyone interested in giving exams had to be tested first.

I was elected a Secretary-Treasurer of PTG in 1983, and served in that position for four years followed by two years as Vice President and two years as President. I was honored to be elected as President of IAPBT in Kyoto.

Beside working on pianos, I enjoy singing. I sing professionally and have appeared with the Indianapolis Opera. I also sing in a duet revue of Jerome Kern music which tours various parts of the USA. My wife, Julie and I have two sons; Charles, age 6, and Daniel, age 4. Julie is a French teacher at a preschool where she teaches 2 1/2 to seven-year-old students. I have always enjoyed learning foreign languages, and IAPBT has given me opportunity to learn new ones and try them out.

In the next issue of the IAPBT newsletter we will meet another of your officers.

Exchange Program Suggested

Among our strong IAPBT supporters in PTG we have had some discussions of what IAPBT can and could do. IAPBT has been bringing technicians together from all over the world for many years now. That has done a lot of good for technicians.

Ed Hilbert has suggested that we consider a cultural exchange program. We could collect names of those people in each country who are willing to house someone at their home for a two or three-week visit. Then we could compile a list of those who would like to visit another country on such an exchange program.

Such a program could make visits to other countries far less expensive by saving on hotel bills, while creating a situation where the person visiting would get a much truer picture of the culture in the country he is visiting. It would also give the hosts an insight into another culture by having the visitor stay with them. This program could let us see how people in other countries operate their piano business.

Most piano technicians don't have large houses, but it seems people might appreciate a stay in a home more than the comforts of a hotel. Please give us your input on this. All IAPBT would have to do is to collect information and match up people willing to host with people willing to travel.

Please send your feelings to IAPBT at the address listed in this newsletter.

Report From Australia

Sid Stone
Piano Technicians Guild

How much do you know about Australia — its size, its geographical divisions, its people, its commerce, its capital, its piano industry? The size of Australia is the same size of the United States. Overlapping maps of the two countries bears this out. Its capital is not Sydney, or Melbourne, but Canberra. Australia is divided into six states. The people are friendly, but if you accuse them of talking funny, they will say that "the British gave us the language, and what we have done with it is beyond their control." They do not drive on the right side of the road (like we do), therefore they drive on the *wrong* side. (They have a good sense of humor.)

Pianos and automobiles are considerably higher than in the U.S. Gasoline is double, but the government takes about half in various taxes. Restaurant prices are higher, but if you go into one of the many clubs in Sydney, you can get a T-bone steak dinner for $5.90 (about $4.00 U.S.) because these clubs are subsidized by the dozens of slot machines each one has. The biggest difference in prices I saw was when I went to a copy place to have some copies of handouts for my seminars — 30 cents a copy (about 22 cents our money).

Australia is a very beautiful and interesting country, but this report is concerned with the piano industry, especially those who service pianos there. In the past, there were several piano manufacturers, though none exist at the present time. There is a movement to see if it is possible to start a piano factory partially for the need for training new people who are interested in piano servicing. Some of the schools for higher learning and music conservatories have had what appears to be excellent courses in piano technology, but as far as I know, there is only one left.

One of the largest piano manufacturers was the Beale Piano Factory, which made about 100,000 pianos from 1900 to 1975. The company celebrated its silver jubilee in 1925 and claimed in newspaper articles at the time to be the largest piano manufacturer in the British Empire as well as the world's most self-contained factory. The Beale piano has an iron pinblock and tapered tuning pins with a slotted lock nut which helps tuning stability. Many of the Beale pianos are found today in all parts of Australia. Their closing was forced by the high cost of modernization and the low cost of imported pianos.

My meeting with the Piano Tuners and Technicians Guild, Inc. of South Wales was beyond expectation. Two months prior to our going, Alice and I saw a television commercial about Australia with the round trip fair from San Francisco to Sydney for $871.00, less than half the regular fare. Since Alice's mother and one of her brothers live in Sydney, and since I wanted to meet with the piano technicians ever since the Toronto Convention, it was an easy decision. Because of the shortage of time involved I hesitated to try to set up a meeting.

What I did not count on was a member of the N.S.W. Guild by the name of Bob McDonald who had heard of my coming and he arranged for the two meetings both of which turned out to have good attendance. They showed much interest in the American PTG, history, organization, our conventions and seminars, our technicals, and especially our testing program.

It was interesting to find the similarities and the differences between our Guild and theirs. Their national Guild is only about five years old, and some of the problems which besieged PTG in its early years are being encountered in Australia today. In meeting with these Guild members of New South Wales on April 8 and 10, I tried to convince them that the personality conflicts and the regional disputes they are having now will go away in time as they did for us. Another similarity is the quality of workmanship of some of these members, on a par with George Defebaugh and Wally Brooks and others in our PTG. The differences seemed to be mostly in nomenclature. What we call technicals they call workshops. Our repair shops are their factories. We have "franchised" members, and they have "financial" members. We have piano movers — they have piano removers. Our conventions are usually held in hotels, whereas theirs are held at the conservatory, university, etc. We are prohibited by law to discuss tuning fees — they vote on the "minimum tuner's fee" every few months. (However, one member stated that they are not allowed to discuss fees over the phone.)

Their first convention was held in 1985, and consisted of different lecturers, many with worldwide status. It was at that time that the national Guild was formed, encouraged by piano manufacturers. At the following convention in Victoria a profit of $5,000 was realized. After some pressure the Victoria Guild gave $1,000 to the national organization, which was appreciated by all. This year's convention is being held in Perth, Western Australia. Perth is as far west of Sydney as San Francisco is west of Washington, D.C. The next convention will probably be in Sydney, to coincide with the Australian Piano Competition in 1992.

In one of the seminars I had scheduled a technical on pitch raising, with a checklist of 12 conditions to consider before raising pitch. This was to be concluded with a five-minute "silent" pitch raise. The piano on which this was to be performed was 30 cents flat, but almost all the hammers were sluggish. Our host, Ara Vertankian, took a heat gun to the hammer butt centers, and in just a minute or two had them all freed. Copies of the August 1979 *Journal's* article on "Those Sticky Sticking Keys" were handed out, and Ara knew which one of the 88 possible causes listed was needed. Other subjects at the two seminars were "Grand Action Troubleshooting" and "Business Building." By the way, my five-minute pitch raise demonstration was interrupted about halfway through by a call from the President of the Australian Piano Tuners and Technicians Guild, Mr. John Cross, in Perth, Western Australia.

A statement made by David Mansfield, President of the N.S.W.P.T.T.G., was most interesting: "When people ask me what piano to buy, I tell them to buy the *cheapest* piano. And what is the cheapest piano? A Steinway!! Because of its life expectancy and its value after 50, 75, or 100 years. Therefore it is the best buy, the best investment." I'll leave you with that.

Technicians' Organizations Around The World

Associazone Italiana Accordatori Riparartori de Pianofortl
President: Sergio Griffa
Via Della Signora 1
1-20122 Milano, Italy

Australian Piano Tuners and Technicians Association
President: John Cross
516 Light Street
Dianella 6062
Western Australia

Bund Deutscher Klavierbauer
President: Udo Schmidt
c/o Steingraeber & Sohne
Friedrichstrasse 2
8580 Bayreuth, Germany

Dansk Pianostemmer-Union
President: Gunnar Christensen
Thorsgade 14
8900 Randers
Denmark

European Union of Piano Makers
President: Leonardo Duricic
c/o Schimmel Pianofortefabrik
Frierich-Selle-Strasse 20
D-3300 Braunschweig
Germany

Japan Piano Tuners Association
President: Tokuichi Ojima
Gakki-Kaikan 6F
2-18-21 Sotokanda Chiyoda-KU
Tokyo, Japan

Korea Association of Piano Tuners
President: Chun Sik Chang
#63-4 203 Song Am Bldg.
Muak-Dong Jongro-Gu
Seoul, Korea

L'Association Francaise Des Accordurs-Reparateurs De Pianos
President: Jacques Millioz
Les Jasses
30720 Ribaute Les Tavernes
France

New Zealand Piano Technicians Guild
Owen S. Mathieson
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Mt. Albert 3
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Norsk Pianostemmernes Forening
President: Odd L. Aanstad
Huser, Asmaloy
N-1674 Vesteroyhuser
Norway

Pianoforte Tuners' Association
Les Sherlock
10 Reculver Road
Herne Bay
Kent CT6-6LD, England

Piano Technicians Guild, Inc.
President: Nolan Zeringue
4510 Belleview, Suite 100
Kansas City, MO 64111 USA

Schweizerischer Verband der Klavierbauer und Stimmer
President: Edgar Schokle
Lindenfeldweg 9
4106 Therwil, Switzerland

Suomen Pianovirittajateknikot r.y.
President: Kari Arosson
Raatimiehenkatu 6 D 68
00140 Helsinki
Finland

Sveriges Pianostammare
President: Borje Gyllhede
Aprikosgatan 27
S-16236 Vallingby
Sweden

Taipei Piano Technicians Association
President: Oliver Chang
2 Fl. No. 532, Song-Chiang Road
Taipei, Taiwan 10478

Dates, Sites Needed

One important thing that this newsletter can do is to keep people informed of the activities of other organizations. I would like to see us keep a list of upcoming meetings of piano technicians that are happening anywhere in the world.

We are including a list of the PTG annual conventions with dates and locations for as far ahead as they are booked. We would like to include dates and places for meetings elsewhere in the world, but we need the information from your organizations. Major international trips require more time to plan so we need to have information as far ahead as possible.

July 13-17, 1991 ....Philadelphia, PA
July 22-26, 1992 ....Sacramento, CA
July 14-18, 1993 ....Milwaukee, WI

Friends Of IAPBT

This newsletter and other IAPBT activities are conducted through the Piano Technicians Guild Home Office. To help defray costs of these activities, contributions are solicited from "Friends of IAPBT." Our thanks to the individuals listed below, who have contributed for the 1991 year's activities.

Lynn Atkins
William Balmer
Robert H. Bell
J. R. Berens
Ron Berry
Orville Braymer
Chng Kian Chong
Harold Corwin
Diane Cottrell
Gerald Cousins
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Sharla Kistler
Lorelle Nelson
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Paul Fleisher
Owen Greyling
Peter Imrie
Ken Serviss

IAPBT's Seventh Biennial General Meeting
Seoul, South Korea — June 5-7, 1991
Hosted by the Korean Association of Piano Technicians

MAY **UPDATE** 1991

Published Monthly For Members Of The Piano Technicians Guild, Inc.

Proposed Changes To Bylaws, Regulations And Codes — 1991

The following proposed changes to the Guild Bylaws, Regulations and Codes have been submitted by the Guild's Bylaws Committee for consideration during the 1991 Council meeting. The Council meeting will be held July 12-13 during this summer's convention at the Adam's Mark Hotel in Philadelphia, PA.

Bylaws Committee members are Colette Collier, Chair; Larry Crabb, Jr.; Leon Speir, and Sharla Kistler (ex-officio).

Please Note: *The page numbers in brackets refer to pages in the 1990 October Journal Supplement, containing the PTG Bylaws, Regulations & Codes. Since this supplement also contains the minutes of the 1990 Council session, and lots of other helpful information, bring your copy to the 1991 Council session for reference.*

Subject: Start Of Membership (Source: PTG Executive Board)
Reference: Bylaws, Article IV, Section 1 [Page 4]
ACTION 1A: Add: e) Membership shall commence with the assignment of a PTG membership number by the PTG Home Office. A PTG membership number will be assigned following receipt of a completed PTG application form, and all necessary dues and fees paid.

Comment: There is a need for a more clearly defined time when membership in PTG begins, especially for exam purposes.
Recommendations: Bylaws committee recommends adoption.

Reference: Bylaws, Article IV, Section 2 (d) [page 4]
ACTION 1B: Add the following sentences:
"The examiner's PTG membership number must appear on all exam application forms. RTT exams conducted without a PTG membership number may be declared invalid."

Current:	*Proposed*:
d. Candidates may apply for the RTT exams at any time, but they must pass the written exam prior to attempting either the technical or the tuning exam.	d. Candidates may apply for the RTT exams at any time, but they must pass the written exam prior to attempting either the technical or the tuning exam. The examinee's PTG membership number must appear on all application and exam forms. RTT exams conducted without a PTG membership number may be declared invalid.

Comments: Since PTG exams are restricted to members, current membership must be established before the exams are taken. If the number is on the application form, both the examining body and the examinee will have shown compliance with the PTG regulations, in the same way a sales clerk circles a credit card expiration date. The word "may" is purposely used instead of "must," so that an exam could be rejected if taken under false pretenses, but also allows for discretion.
Recommendations: Bylaws Committee recommends acceptance.

Subject: Continuing And Reinstated Members (Source: PTG Executive Board)
Reference: Bylaws, Article V, Section 3 (a) and (b) [page 4].
ACTION 2A: Delete the word "continuing" under letter (a) so that this section just refers to "members in good standing."
ACTION 2B: Delete all of letter b.

Current:	*Proposed*:
a. A continuing member shall be in good standing when all dues and fees have been paid as required by PTG and the chapter, and the obligations of membership are met. b. A reinstated member	a. A member shall be in good standing when all dues and fees have been paid as required by PTG and the chapter, and the obligations of membership are met.

Continued on page 2

shall be in good standing when all dues and fees have paid as required by PTG and the chapter and the obligations of membership are met. Additionally, the member to be reinstated must again pay the application fee as well as the required examination fees if reinstatement requires the member to be re-examined.

Comment: There is no known administrative need for this distinction between continuing and reinstated memberships.
Recommendations: Bylaws Committee recommends adoption.

Subject: Dues Increase (Source: PTG Executive Board)
Reference: Bylaws, Article VI, Section 1 (a) and (b) [page 4] (Also see: Regulations, Article IV, Section A)
ACTION 3A: Delete "per capita," change dues amount to $138.00, and combine both (a) and (b) under new section (a)
ACTION 3B: Move present section (d) to new section (b)

Present: a. Per capita dues for Registered Technicians shall be $114.00 per year, U.S. funds.
b. Dues for Associate members shall be 100% of RTT dues.

Proposed: a. Dues for Registered Technicians and Associates shall be $138.00 per year, US funds.
b. Membership dues shall include a subscription to the PTG *Journal* and the PTG *Update*.

Comments: In 1979, RTT dues were $84. In 1980, the dues were increased to $96. The last dues increase, from $96 to $114, passed in 1981, effective 1/1/82. Since that time, efforts to streamline our operations have been successful in reducing costs and producing surplus budgets. The proposed $24 increase includes approximately $12 to keep pace with operational costs. The additional $12 is to offset a new (FY 1992) $50,000 budget item to finance a marketing and public relations program designed to enhance the image of PTG.
Recommendations: Bylaws Committee recommends adoption.

Subject: Time Limit For Canadian Dues Rebate
(Source: Bylaws Committee)
Reference: Bylaws, Article VI, Section 1 (c) [page 4]
ACTION 4: Add "the" before PTG and Canadian, delete comma, change "April 1" to "March 2." Change "allowable" to "granted"

Current: c. PTG Home Office shall return to Canadian chapter of origin, twenty percent (20%) of dues their members pay to PTG prior to April 1 of the dues year. No rebate will be allowable on dues paid after that date. Canadian chapters must apply annually for this rebate stating how the money was spent during the previous year. Rebate money must be used to promote PTG in Canada. Money spent in the prior year in excess of that year's rebate can be carried over to the next succeeding year.

Proposed: c. The PTG Home Office shall return to the Canadian chapter of origin twenty percent (20%) of dues their members pay to PTG prior to March 2 of the dues year. No rebate will be granted on dues paid after that date. Canadian chapters must apply annually for this rebate, stating how the money was spent during the previous year. Rebate money must be used to promote PTG in Canada. Money spent in the prior year in excess of that year's rebate can be carried over to the next succeeding year.

Comments: The dues delinquency date has changed; this date reflects current drop date.
Recommendations: Bylaws Committee recommends adoption.

Subject: Requirements For Special Dues Rates
(Source: Bylaws Committee)
Reference: Bylaws, Article VI, Section 1 (f) [page 5]
ACTION 5: Letter current section(e) as (d). Replace current (f) with proposed (e).

Current: f. A senior member capable of drawing social security benefits or the equivalent may continue membership in one of the following ways:
1. The senior member may elect to pay full PTG dues and maintain good standing, PTG Group Life Insurance benefit, *Journal* subscription, and all other benefits.
2. The senior member may elect to pay PTG dues at two-thirds the normal rate and maintain good standing and the *Journal* subscription. This senior member shall either agree to pay the cost of the PTG Group Life Insurance or consent

Proposed: e. Any member who has a minimum of ten years continuous membership in PTG up to the time of application, has reached the age of sixty-five, and is capable of drawing social security benefits (or the equivalent) may continue membership in one of the following ways:
1. The member may elect to pay full PTG dues and maintain good standing and all membership benefits.
2. Following submission of the proper form, the member may elect to pay PTG dues at 2/3 the normal rate and maintain good standing and the

to drop from the life insurance program but shall receive all other benefits.
3. The senior member who meets the qualifications as outlined in Bylaws Article III, section 2c may be awarded membership in the capacity of a Chapter Sustaining Member in which case a token annual fee of one-third of Registered Technician dues shall be paid for the member by the sponsoring chapter. This payment shall maintain the member's good standing, PTG, Group Life Insurance benefit, *Journal* subscription, and all other benefits.
4. The senior member may continue membership and pay no annual PTG dues provided the member:
a. Has a minimum of ten years continuous membership in the PTG and has reached the age of sixty-five.
b. Is no longer significantly engaged in any form of piano work.
c. Agrees to pay the cost of the PTG Group Life Insurance or consents to drop from the insurance program.
d. Agrees to pay a cost established by the Executive Board for receiving the *Piano Technicians Journal* or consents to drop from the *Journal* mailing to members.

Journal subscription. this member shall either agree to pay the cost of the PTG Group Life Insurance or consent to drop from the life insurance program, but shall receive all other membership benefits.
3. The member who meets the qualifications as outlined in Bylaws Article III, Section 2(c) may be awarded Chapter Sustaining Membership, in which case a token annual fee of 1/3 of the PTG membership dues shall be paid for the member by the sponsoring chapter. This payment shall maintain the member's good standing and all membership benefits.
4. Following submission of the proper form, the member may continue membership and pay no annual PTG dues provided the member:
a. Is no longer significantly engaged in any form of piano work.
b. Agrees to pay the cost of the PTG Group Life Insurance or consents to drop from the insurance program.
c. Agrees to pay a cost established by the Executive Board for receiving the *Piano Technicians Journal* or consents to drop from the *Journal* mailing to members.
d. Has the approval of the chapter.

Comments: Replacement of the proposed language has the following effect:
1. It deletes the reference to a "senior" member, which implies that there is another category of membership. This section describes how any member can continue their association with PTG by one of four methods: at a full rate, 2/3 rate, 1/3 rate, or at no cost. As written, this applies equally to RTT and Associate members.
2. As currently written, there are no special requirements for age or time in service to PTG that apply to item #2. There is also no form to fill out so that the facts can be established and made a matter of record. This has been solely the option of the "senior" member, and caused weeping and gnashing of teeth at the Home Office.
Recommendations: Bylaws Committee recommends adoption.

Subject: Dues Collection And Disbursement
(Source: Bylaws Committee)
Reference: Bylaws, Article VI, Section 4 (b) [page 5]
ACTION 6A: Replace current section b with proposed section b

Current: b. Upon receipt of the ratified application and fee, the Home Office shall process the application as an Associate member. Billing for dues shall be sent payable from the beginning of the month following acceptance into membership.

Proposed: b. Upon receipt of the ratified application and fee, the PTG Home Office shall process the application for Associate membership. A dues bill, pro-rated from the beginning of the month following acceptance into membership, shall be sent as soon as possible, payable within 30 days. Following receipt of prorated dues, a PTG membership number will be assigned.

Comments: This conforms to current policy and practice, and hopefully is easier to understand.
Recommendations: Bylaws committee recommends adoption.

Reference: Regulations, Article III, Section B, (1) [page 12]
ACTION 6B: Change "the calendar quarter" to "the month" in the first sentence.
ACTION 6C: Delete the second sentence.

Current: 1. Dues Date for New Members — A new member shall first be liable for dues beginning the first of the calendar quarter after acceptance to membership. The date of acceptance to membership is construed to mean the date on which approval is granted, and recorded on the application form, by a duly constituted body or officer of PTG.

Proposed: 1. Dues Date for New Members — A new member shall first be liable for dues beginning the first of the month after acceptance to membership.

Comments: The date of acceptance is covered under Bylaws, Article IV, Section 1, and dealt with in Action 1A.

Recommendations: Bylaws Committee recommends adoption.

Reference: Regulations, Article III, Section B (2) [page 2]
ACTION 6D: Delete second sentence, and add at end of section: "Chapters shall be responsible for billing and collecting their own pro-rated chapter dues for the first year of membership."
ACTION 6E: Last sentence: change "in April" to "by April 1."

Current:	*Proposed*:
2. Chapter Dues Collection — Chapters may elect to have chapter dues billed and collected by the Home Office. Chapter dues will be included in their entirety as part of the first payment. Such dues will be reported and sent to participating chapters in April.	2. Chapter Dues Collection — Chapters may elect to have chapter dues billed and collected by the Home Office. Such dues will be reported and sent to participating chapters by April 1. Chapter shall be responsible for billing and collecting their own pro-rated chapter dues for the first year of membership.

Comments: Since the dues are now all collected (or the members dropped) by March 2, the checks can be cut and funds disbursed more quickly. Some chapters may need these funds in order to operate. Since there are no more partial payments of PTG dues, the second sentence makes no sense. In addition, for the first year of membership, the PTG Home Office bills only for pro-rated PTG dues, not chapter dues. It is the chapter's responsibility to collect their own chapter dues for new member's accepted during the fiscal year.
Recommendations: Bylaws Committee recommends adoption.

Subject: Restoration Of Membership Following Resignation (Source: PTG Executive Committee and Bylaws Committee)
Reference: Bylaws, Article VI, Section 5 and 6 [page 5]
ACTION 7A: Rename this section "Resignations and Membership Restoration" and combine present Section 5 and 6 under new Section 5.
ACTION 7B, C, D, E, AND F: ***7B)*** Add a letter (a) before the first sentence.
7C) Add a letter (b) before the second sentence, and delete the words "wanting reinstatement." Delete the period and replace the third sentence with: "and must pay the regular application fee."
7D) Delete the fourth sentence, and insert the following sentence for new section (c): "Exams taken previously by Associate members for RTT upgrade will be subject to the same time constraints as in Regulations, Article V, RTT Exams."
7E) Add a letter (d) before the fifth sentence, and change "unless their original examinations had the same form as those in use at the time of reinstatement" to "unless their most recent examinations are the current version." Add the following sentence to this section: "The PTG reclassification form must be submitted to the PTG Home Office in order to process upgrade to RTT membership."
7F) Add new section (e): (e) The effective dates of the current versions of the PTG Exams are: written exam: (7/1/85); technical exam: (6/1/90); tuning(aural): (7/1/86); tuning (electronic): (1/1/90)

Current:	*Proposed*:
Section 5 — Resignations. A member in good standing shall have the right to resign membership in PTG. Section 6 — Reinstatement. Any former member wanting reinstatement must make application as a new member. The application fee will be assessed but back dues will not. Former Associate members may be readmitted to their former classification without examination. Former Registered Tuner-Technician members must take examinations and pay the required examination fees, unless their original examinations had the same form as those in use at the time of reinstatement.	Section 5 — Resignations and Membership Restoration. a) A member in good standing shall have the right to resign membership in PTG. b) Any former member must make application as a new member and must pay the regular application fee. c) Exams taken previously by Associate members for RTT upgrade will be subject to the time constraints as in Regulations, Article V, RTT Exams. d) Former Registered Tuner-Technicians must take new examinations and pay the required examination fees, unless their most recent examinations are the current versions. The PTG reclassification form must be submitted to the PTG Home Office in order to process upgrade to RTT membership. e) The effective dates of the current versions of the PTG Exams are: written exam: 7/1/85; technical exam: 6/1/90; tuning (aural): 7/1/86; tuning (electronic): 1/1/90

Comment: There has been rampant confusion over the word "reinstatement." In 1978, the PTG Bylaws stated: "A member who has resigned or who has been dropped from PTG for nonpayment of dues shall be required to apply as a new member in order to rejoin PTG." In 1979, an attempt was made to furnish incentive to resign in good standing by changing to: "A member who has resigned in good standing may be reinstated with continuing membership by paying any

back dues and with the approval of the chapter." This is where the references to the application fees and back dues originate. We then had two "types" of membership — continuing and reinstated. The present language was passed in 1984, with the intention of once again requiring all chapters to re-examine RTT's wishing to rejoin PTG. Since that time, new time limits have been adopted, in addition to several changes to the format of the exams. If the "current version" is defined here, not only will all chapters have the most current information each year, but version changes will have to be passed in the Council.
Recommendations: Bylaws Committee recommends adoption.

Subject: Voting Procedures In Council (Source: Bylaws Committee)
Reference:Bylaws, Article XI, Section 3, (a-d) [page 7]
ACTION 8A: Combine section a) and b) under new section a)
ACTION 8B: Combine section d) and c) under new section b)
ACTION 8C: Delete phrase: "but with voting privilege only on matters of procedure"

Current:	*Proposed*:
a. The voting membership of the Council shall be composed of a delegate or alternate delegate from each chapter.	a. The voting membership of the Council shall be composed of a delegate or alternate delegate from each chapter. Each chapter delegate or alternate delegate shall carry one vote for each franchised member in good standing in the chapter.
b. Each chapter delegate or alternate delegate shall carry one vote for each franchised member in good standing in the chapter.	b. The elected officers shall be ex-officio members of the Council with privilege of debate and motion. An elected officer of PTG shall not be eligible to serve as a delegate to Council.
c. An elected officer of PTG shall not be eligible to serve as a delegate to Council.	
d. The elected officers shall be ex-officio members of the Council with privilege of debate and motion but with voting privilege only on matters of procedure.	

Comments: This section has been rearranged for coherence. The deletion of the reference to board members voting on procedures in Council is to conform to current practice.
Recommendations: Bylaws Committee recommends adoption.

ACTION 8D: Replace current section (e) with proposed section (c)

Current:	*Proposed*:
e. On procedural matters, each Council member shall have one vote.	c. All business shall be transacted on the basis of one vote per delegate or alternate. Twenty-five percent in favor shall be required to order a ballot or a roll call vote.

Comment: There are many methods of voting available to the Council. Although current practice is usually by voice vote or voting cards, some number should be agreed upon as the amount required to cause the assembly to use another method. Without another stipulation, we will be required to have a majority, per Robert's Rules. Robert's Rules (page 413) suggests that the U.S. Congress uses "one-fifth of those present" to require another method of voting. Whatever number is used, it should be agreed to be one which will indicate a significant interest in changing the normal voting method. One-fourth was chosen here because it meets that criteria, and is an easy number to derive.
Recommendations: Bylaws Committee recommends adoption.

ACTION 8E: Delete current section (f) and add proposed sections (d) and (e)

Current:	*Proposed*:
f. On all other matters, voting shall be as in Item (e) above, except that on a call for division on any vote except a ballot, the vote shall be by franchised membership representation.	d. All ballots shall include the chapter franchised membership representation.
	e. If a roll call vote is ordered, chapters shall be called individually by the Treasurer-Recording Secretary. The vote shall be counted according to franchised membership representation.

Comments: This is intended to legitimize the procedures we already have in place, not to institute new ones, and was done in consultation with the PTG Parliamentarian. Our current reference to "division" bears no resemblance to the term as used in Robert's Rules, (page 276) and so would preclude us from using the procedure as Robert describes it. It is more properly referred to as a "roll call" vote.
Recommendations: Bylaws Committee recommends adoption.

Subject: Delete Selected Standing Committees (Source: Executive Board)
Reference: Bylaws, Article XIV, Section 1 [page 9]; Regulations, Article II, Section B, #3 and #16 [pages 11, 12]
ACTION 9A: Delete Conferences and Seminars Committee and Technical Institute Evaluation Committee from listed standing committees
ACTION 9B: Delete the two above-named committees from the Regulations

Comments: The PTG Executive Board is given full responsibility and authority over the Annual PTG Convention and Institute, under Bylaws Article XV, Section 2(b). Conferences and Seminars is more properly designated as a Board committee. The Technical Institute Evaluation Committee's job is currently being done by the Institute Committee, the PTG Home Office, and the PTG Executive Board.
Recommendations: Bylaws Committee recommends adoption.

Subject: Add New Standing Committees
Reference: Bylaws, Article XIV, Section 1 [page 9]
Please Note: *There are only two types of PTG committees. Standing committees are listed in the Bylaws. They have an ongoing mission and do not need yearly approval from Council to function. Special committees may be formed by the Council or by presidential appointment, and must be reviewed yearly by the Council. Council has two options: any of these committees could be accepted as standing committees, or approved as special committees for the coming year.*
ACTION 10A: Add College and University Technicians (Source: PTG Executive Board)
Comment: This committee was deleted as a standing committee by the 1984 Council in Indianapolis. Recent activity by this committee may justify its reinstatement.
Recommendations: Bylaws Committee recommends adoption.

Reference: Regulations, Article II, Section B [page 11]
ACTION 10B: College and University Technicians Committee — There shall be a College and University Technicians Committee whose principal duty shall be to promote the particular interests of college and university technicians. This committee shall maintain an updated list of college and university technicians. Additional activities may include a regular newsletter, educational opportunities, and/or other special projects.
Recommendations: Bylaws Committee recommends adoption.
ACTION 10C: Add Public Relations Committee (Source: Syracuse Chapter)
Comments: This committee was also a standing committee until the 1984 Council action. The Syracuse Chapter comments are found below.

Reference: Regulations, Article II, Section B, 15 [page 12]
ACTION 10D: Insert and renumber accordingly: Public Relations — There shall be a Public Relations Committee which shall be comprised of the President of the Guild or his designee, the chairman of the Trade Relations Committee, the chairman of the Teacher Relations Committee, and the executive director in the capacity of an ex-officio member. The mission of the committee shall be to improve the image of the Piano Technicians Guild by promoting a widespread continuing awareness of the high standards and goals of the Guild and its members through a carefully planned program of advertising designed specifically to target pianists, piano pupils and their parents, piano teachers, public school music teachers, and all phases of the piano industry.
Comments: (submitted by Syracuse Chapter) The need exists for the Piano Technicians Guild to improve its member benefits and also to expand its image. Each of these goals can be reached by selective advertising which would keep all those concerned with piano service informed regarding the important role of the Guild plays in assuring reliable piano service by making available an international registry of qualified piano technicians.
As an additional member benefit, each registered Guild member's image would be enhanced by increasing public awareness of the Guild. Additionally, if the Guild were to include in its advertising an 800 telephone number for people to call in order to locate a Guild Registered Tuner-Technician in the caller's immediate area, this would provide a valuable service to piano owners and a further benefit to Guild members.
Additional Comments: The right to serve on committees is one of the privileges of membership in PTG. Our current executive director is not a member, but an employee of the association. While his input would certainly be solicited, and his involvement necessary, this distinction should be maintained. The PTG President and vice president are ex-officio members of all committees, except the nominating committee, so would no need to be named here.
Selecting committee members has traditionally been the prerogative of the PTG President, with advice and consent of the rest of the Board. Committee chairmanships that automatically result in another committee appointment may not serve the best interests of either that committee or PTG.
Recommendation: The Bylaws Committee suggests that, if this committee is formed, this proposal be amended so that the personnel would be appointed in the traditional manner. In addition, we recommend that this proposal be considered in conjunction with the marketing proposal to be presented by the Executive Board.

ACTION 10F: Insert and renumber accordingly: Advertising Guidelines Committee — There shall be an Advertising Guidelines Committee, composed of five franchised members, including the chairman and the ex-officio members. The duties of the Advertising Guidelines Committee shall include: a. Submission of articles to the *Journal* on a regular basis to educate the current membership as to the correct use of the PTG name and emblems;

b. Assisting in the preparation of information for new members to aid them in the proper use of the PTG name and emblems;
c. Acting as a board of review, with the authority to judge the propriety of specific cases of questionable use of the PTG name and emblems in any such cases as may be brought to them by any PTG member or staff member. A yearly report of any such actions shall be presented to the Council, which shall retain final authority.

Comments: The Washington, D.C., chapter has had continual problems with advertisements found in our area by both members and non-members. We feel that a program of education is extremely important to give PTG members direction and guidance. In addition, there is presently no source of guidance to which members can turn if they have a question about their advertising. This committee is intended to function to assist members in their own advertising as PTG members, to carry out the internal advertising policies of PTG, and not to set those policies. It can provide valuable input in the cases of members who might find themselves otherwise subject to disciplinary action for false or misleading advertising per the PTG Internal Code of Ethics, as well as a resource to chapter officers when such occasions arise.
Recommendations: Bylaws Committee recommends adoption.

Subject: Housekeeping (Source: Bylaws Committee)
ACTION 11A: Replace "Treasurer-Recording Secretary" with "Secretary-Treasurer" wherever it appears.

Comments: This conforms to current practice.
Recommendations: Bylaws Committee recommends adoption.

Reference: Bylaws, Article IX, Section 4 (d) [page 6]
ACTION 11B: Move last sentence from Article IX, Section 4 (d) to Article IX, Section 2, (c) "New chapters must either send a representative or a letter through the RVP to the Council Meeting at which the new charter is approved."

Comments: This topic belongs in the section on how new chapters are established, rather than in the section covering jurisdiction.
Recommendations: Bylaws Committee recommends adoption.

Reference: Article X, Section 3 [page 7]
ACTION 11C: Rearrange sentence as indicated.

Current:	*Proposed*:
a. Each region shall be served by a regional vice president elected to serve for one (1) year in caucus at the annual Council session.	a. Each region shall be served by a regional vice president elected in caucus at the annual Council session to serve for one (1) year.

Comments: Need we say more?
Recommendations: Bylaws Committee recommends adoption.

Subject: Committee Name Changes (Source: PTG Executive Board)
Reference: Bylaws, Article XIV, Section 1 [page 9]
ACTION 11D: Change the following committee names: "Bylaws and Regulations" to "Bylaws"; "Chapter Management and Chapter Achievement" to "Chapter Management and Achievement"; "Minutes Approving" to "Council Minutes Approval"; "Visually Impaired Problems and Affairs" to "Visually Impaired Concerns"

Comment: The selected names are either already in common use or are considered better descriptions of the committee's activity.
Recommendations: Bylaws Committee recommends adoption.

Subject: PTG Life Insurance (Source: PTG Executive Board)
ACTION 12: Discontinue the PTG death benefit program, and delete all references in PTG publications to PTG Life Insurance or death benefit. (Note: This action will also delete the supplemental life policies carried by some members under this company.)

Comments: In 1990, PTG spent more than $57,000 on this insurance program, which paid out only $37,000 in benefits. The Executive Board has investigated several options. The policy has been marketed, resulting in only one or two companies interested in insuring us as all; and more cost savings were found. Another alternative was to self-insure; this was researched by an attorney, who responded that we would essentially be required to set up an insurance agency. This would be a monumental task, since we would have to meet not only the insurance regulations in the state of Missouri, but in all states in which the policy were offered. Calling the plan a death benefit which returns member equity unlocks the Pandora's box of the Internal Revenue Service, which requires that non-profit associations may not return equity (hence the name non-profit). At press time, the Executive Board was still investigating, and may yet produce a substitute amendment to offer which will meet the required criteria.
Recommendations: Bylaws Committee recommends adoption.

Marketing Study Group Reports Findings

Market Development And Advertising Committee Chair

Our group originally formed to study the PTG pamphlets and brochures and make recommendations to the Board on how they could be improved. It sounded like a simple project at first. We could see that our printed materials needed a uniform design format, a sharper graphic image, a consistent writing style; our desire was to create a truly professional image of PTG and PTG members. As we studied how other similar associations have accomplished this feat, we realized that superior results are not obtained by instinct or accident. Good planning is necessary.

As an organization we have never taken time to work out a plan for promoting PTG and improving the status of our members. Our existing promotional materials have emerged from dedicated individuals or committees working in different locations and with varied goals. The noble efforts of these volunteers needed coordination in order to make the contribution count. In short, we concluded that to simply revise the brochures without integrating them into a larger strategy would be a mistake; all our materials (videos, handbooks, pamphlets, etc.) need to present a consistent, strong, and positive image of us and our members.

Suddenly our simple brochure project seemed vast and complex. Fortunately, we soon discovered a concept that showed us a way to think the problem through: the marketing concept. To quote Theodore Levitt, the marketer thinks "The purpose of a business is to create and keep a customer. To do that , you have to do those things that will make people want to do business with you. All other truths on this subject are merely derivative. Taking this maxim as an assumption, the marketer proceeds to identify the client, define his/her human needs and organize the resources available to meeting those needs. We decided PTG probably needed a marketing plan.

Viewed from the marketing perspective, PTG is itself a business; the clients of PTG are its members and its prospective members. At the same time, each of our members has a business with clients whose needs and priorities must be considered. One way that PTG can serve its client-members is to develop new marketing tools that enable members to create and keep customers. Here are a few examples of possible program elements that could be contained in a marketing plan:

*Design special projects to target specific audiences. To support "Music In Our Schools Week" we could produce a packet of material for public school teachers offering authoritative data to support their funding requests, suggestions on protecting school pianos from damage and abuse, etc.

*Develop, for rebuilders, a video that illustrates the work done in a piano restoration; the aim would be to explain technical procedures to the layperson in a clear and compelling fashion.

*Develop brochures that can be customized. Member's names can be printed (not rubber stamped) or an insert provided for business card insert. Specific sections of the brochure can be customized to describe local climate and tuning considerations for instance.

*Expand the existing handbook "Presenting Programs To Teachers" to include more features such as camera-ready handouts, public speaking kits with prepared visual aids such as a slide show and narration.

Marketing skills applied to our organizational goals could also net us benefits; consider the following:

*Many RTT members want to see more Associates upgrade by taking the RTT exams; this is a marketing problem! We could challenge ourselves to design incentives into our programs and market RTT status more aggressively.

*New brochures that present a positive and professional image of us and our organization will enhance our image within the music community as well as with our target audiences. Member loyalty and professional self-esteem can both be increased.

*Market surveys of our membership can be done periodically to poll our opinions, priorities and desires; the data could be used in long-term planning.

*Classes and *Journal* articles from a marketing professional could be offered.

In order to create and execute a marketing plan, we recommend engaging the services of a marketing professional as a partner for PTG in this new approach. We are piano service professionals; our message to clients is that we are skilled specialists, trustworthy and capable. So when a client needs piano service we invariably advise using professional service. Thus logically, if we in PTG discern a need for marketing expertise, we should seek out a competent and compatible professional to work with us to achieve our goals.

Since last July, our group has been searching for just such a professional partner. We identified six potential firms, requested proposals from each, narrowed the list to three and are now in the process of interviewing the finalists. Recognizing that one of our organizational strengths is our strong volunteer spirit, it is essential that our professional partner be a true partner who will enhance our members' efforts and not replace them. In Philadelphia, we hope to have the recommended candidate present at the Council session. The presentation there will include samples of the work done by the designated firm and

budget proposals. The proposed 1992 budget suggests spending $50,000 on marketing; after deliberation, Council will decide if PTG should dedicate this amount of money to this new approach.

Questions About This Marketing Proposal

1. Can we afford to increase our budget for marketing in a time of recession? It is a bold step; however, can we afford not to invest in ourselves? We compete in a very crowded marketplace; it is necessary that we become better at explaining the value of our services to existing and potential customers. We have to improve our marketing and public relation skills because the competition for consumer dollars is intense; and, believe me, the competition is using professional help!

2. We have tried using professionals before in PTG; it doesn't work because you spend too much money for little return. How will this project differ? The Board has learned much from looking at PTG's history of use of professional help; certainly we recognize mistakes in the past. However, recently we can point to increasing success; our experience with Martin Fromm management was positive, and certainly our present Home Office staff represents a well-chosen group of dedicated professionals. Also, our *Journal* has been in the hands of professionals for quite some time; Larry Goldsmith joined us in 1983 and has worked exceptionally well with our *Journal* editors and member-authors to steadily improve this magazine, which is our major member benefit. If we choose well, we can find professional partners who are honest, competent and hard-working.

3. Does this proposal plan to spend a lot of money on advertising? No. We are asking prospective firms to give us ideas on improving our pamphlets and print image, suggestions on increasing our media visibility (newspapers, radio, magazines, TV), and development of affordable marketing tools for our members. A major advertising campaign would not be a good use of PTG money.

4. How do we ensure our money is well-spent? Council has the opportunity to review the budget annually and can be provided with a detailed report on how marketing funds are spent. The PTG Board and staff have demonstrated fiscal prudence over the last decade, keeping dues constant for ten years while still increasing services and building up our reserves. Accountability for funds spent can be built into the professional relationship.

To summarize, we as professionals in piano service are best equipped to meet our client's needs for piano care. However, we are not always well suited to the task of explaining our work and its value to the various publics (teachers, dealers, professional presenters, etc.). The use of marketing is a given in most businesses and organizations. Wouldn't our industry also benefit from use of professional marketing tools?

Membership Category Study Committee Asks Questions

Jim Ellis
Membership Category Study Committee Chair

In order to obtain more information from as many members as possible, a simple questionnaire will be passed out in Council, to be returned to committee before the close of the convention. Please understand that it will be up to the committee to work out any details. What the committee wants from the chapters, via their delegates, is a general understanding of the membership categories the chapters want. To expedite this process, the questions that will appear on the questionnaire to be passed out in Council are listed below. We request that the chapters discuss these issues prior to the convention.

We sincerely request that delegates discuss these issues with their chapters prior to the convention.
Questions that will appear on the questionnaire:
1. What kind of organization does your chapter want the Piano Technicians Guild to be?
a. As it is now with no changes ( )
b. For RTT's only ( )
c. As it is now with one or more franchised categories added ( )
d. As it is now with one or more non-franchised categories added ( )
2. If you checked "c" or "d" above, describe the categories you would want added.
3. Would your chapter favor a special category for those who are neither technicians nor rebuilders (example: dealers, movers, refinishers, etc.) if it didn't interfere with other categories?
yes ( ) no ( ) why?
4. Would your chapter favor a category specifically drawn up for rebuilders, keeping in mind that it might include player action specialists, stringers, soundboard makers, woodworkers, and the like, that one individual rebuilder may not perform all of these tasks himself, and that a comprehensive test may be difficult to formulate and impractical to administer?
yes ( ) no ( )

Written Exams Revised

A special project undertaken by Examinations and Test Standards Committee member Jack Stebbins and some select assistants has resulted in newly-edited versions of PTG Written Exams #1 and #2 being available for Board and Council review and approval in Philadelphia this July. If you would like to see the new versions in advance of the convention, please call Mary Kinman at the PTG Home Office, (816) 753-7747 (RTTs only).

Michael Travis

The PTG Survey: Part-Time Professional

Carl Root, Chair
Economic Affairs Committee

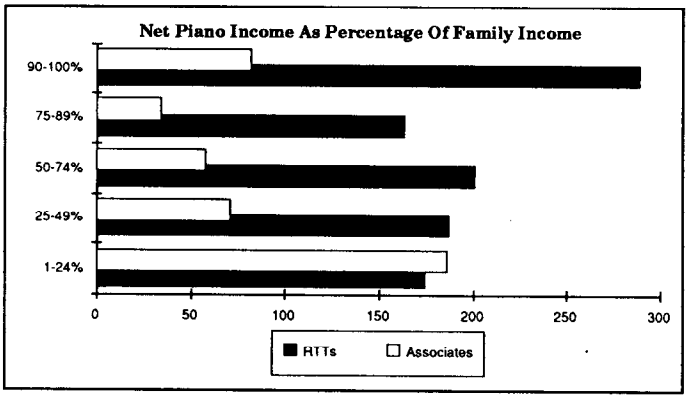
To many technicians, the term "part-time professional" is a contradiction in terms. A major commitment of time and attention is necessary, they say, to become familiar with all the quirks that pianos are heir to. We've all seen "dabblers" ruin pianos, but we've also seen experienced "tooners" perpetrate the same crimes. It may still be tempting to condemn all part-timers — until you have actually seen them produce good work.

Many of us do know competent part-time technicians. Apart from that, it is possible that far more professional technicians are part-timers than we may have suspected. Responding to requests for survey comments and questions, a member observed that "a large portion of us are in the business part-time, are single, or live on very low incomes."

A part-time job is often secondary to another job which takes up more working hours and provides most of the income. Piano service work provided less than half of the household income for over 40% of the respondents, but the rest of that income seldom comes from another job. Only 14% spend 25 hours per week or more doing other income producing work and if you look at just RTTs, the figure is less than 8%.

There are several reasons for modifying the data, however. Shop time was unintentionally overstated by some members with little or no shop time because of the wording and limited number of choices for that question. More importantly, most members entered data for tuning, office, and travel time for a good week rather than calculating the average of all weeks. The data is more likely to reflect a September schedule without taking July and August into account. How many "slough" weeks do you have each year? ("slough" rhymes with both "rough" and "although")

Any analysis of the operations of your business requires good record keeping, but few technicians see the need to keep the kind of records that will provide an accurate breakdown of all working hours for an entire year. As an alternative, you should try to come up with some sort of estimate. Fortunately, you already know some of the relevant details of your business that can be applied to this exercise. You know how long it takes to service a typical piano, and you know how many pianos you service in a typical year. You need to know roughly what portion of your time and income is spent doing non-tuning field service work, especially if the net hourly rate for that kind of work is substantially higher or lower than for tuning (although I see no reason why it should be).



You need to know how much time you spend driving to and from appointments and how much time you spend in the office. You can probably come up with some numbers for yesterday, but what about for the whole week? Gathering data is problematic because there is no time frame which is both consistent and easy to track. You can consider data for the day, week, month, quarter, year and beyond. Each as its own cyclical pattern, and awareness of these patterns helps with your cash flow at the very least.

Travel time can be calculated several ways. Divide annual business mileage by the number of service calls to calculate miles per service call. You can also take a typical day and note the time of departure and arrival from your office, then subtract the time you spend servicing pianos. Divide the difference by the number of calls for the day and you will have driving time per service call.

Office time may be a bit more illusive. It takes only a few minutes in the morning to grab your 3 x 5 cards or print out your schedule. Updating your records when you get home doesn't take much time either. It's all those phone calls that are hard to keep track of. Incoming calls, outgoing, scheduling, ordering parts, and PTG networking (if you think it's business related) rarely happen during one tidy block of time each day, but try to keep track for a week and divide by the number of service calls.

Office and travel time rarely have a significant impact on shop work unless you do a lot of small jobs. Most technicians who do shop work indicated that their profit was significantly lower for this segment of their business. Since many technicians continue to value shop time for reasons other than profitability, it may be appropriate to look at shop work as a separate business.

The majority of piano technicians spend most of their time and earn most of their money tuning pianos. Both the sum and ratio of productive and non-productive hours are important statistics for this part of the business. Using the survey data, we can calculate a ratio between the time spent working on pianos in the field compared to office hours and driving for the mythical "average" technician. As an example, let's use 75 minutes for the time it takes to service a piano, and 45 minutes in the office and on the road.

The ratio is about 1.7 to one. This ratio is considered important in most small business analysis, but since both figures are variable for piano technicians, and changes in one have no bearing on the other, the sum is more important. The average sum, according to the survey, is about two hours for tuning, travel, and office time per service call.

You can use this analysis to help you calculate your hourly rate so that it is consistent for both tuning and non-tuning work in the field. If your tuning fee is $60 , then your gross hourly income is $30 (tuning fee divided by the sum of tuning time, office time, and driving time) or ($60÷(74+45). If tuning time is an hour and a half, and driving/office time is an hour, your hourly gross is $24. ($60÷(90+60))

One way of defining a professional is to compare hourly rates to those charged for other services such as dentists, auto mechanics, plumbers, wood workers, and accountants. Do the hourly rates in the $24-$30 range seem "professional" to you? They seem low to me, considering the skills required to do good work, even if you consider our unusually low overhead.

Hourly income is only half of the picture, of course. The other half is how many hours you work. If we use $24 per hour and an annual gross income of $30,000, you come up with 1250 hours work for the year. Even if we give you seven weeks off for vacation, PTG convention, holidays, sick days, and "slough" days, that's still fewer than 28 hours per week! Now who's a part-timer?

A short-form PTG survey from 1987 asked if you work full-time and 81% said yes. The 1990 PTG survey reveals that 81% worked as little as 20 hours per week or more, so it appears that many members have a fairly loose definition of "full-time."

Some of you may not agree with my definitions of "professional" and "part-time." I also realize that many of you are not particularly fascinated with my analytical approach to profitability either. But I believe that knowing how to calculate your hourly rates and knowing how much time you spend every business day is important. Take the time to estimate some data, make a few simple calculations, and use the information as you see fit.

Those of us who keep banker's hours or spend time doing work we enjoy are often envied by the general public, but they are also the same people who wonder how we can make a living pursuing a piano service career. Those of us who can maintain our desired standard of living, and keep up with taxes, insurance, retirement contributions, car payments, mortgage, etc. need not change a thing if finances are the only concern. But most technicians have no retirement plan, many are underinsured, and more than a few have trouble making their 1040ES payments on time. If the ideal of making a substantial improvement in the profitability of your business seems attractive to you, you should consider increasing your net hourly rate, and phase two of this analysis will show you that raising your fees is not necessarily the way to do it. As with most small businesses, it's reducing non-productive time.

If you can develop more efficient tuning procedures and reduce your tuning time to an hour, and if you organize your office and scheduling route so that they take a half hour per customer prorated, then your hourly rate leaps from $30 to$40 — without an increase in your tuning fee! If you raise your rates to $75, but your tuning/travel/office time is two and a half hours, your hourly rate is still only $30.

But alas, efficiency is not the whole answer either. If you cut your time, your income still doesn't increase; if you increase your fee to $75, your income jumps 25%. What counts is your charge relative to the number of customers you can attract, not just the total business time it takes to service each one. If you have not reached full employment, and if you are convinced that there is no one else out there who wants you to service their piano, then you might reasonably take all the time you want, assuming you have nothing else to do. Efficiency becomes important when you want more time to pursue other interests or do more income-producing work.

Are there more potential customers out there? If there are, how do you find them? Can they find you? And does your image attract them enough to motivate them to call you? Unless you're swamped with profitable work — and the survey data suggests that most of us aren't — doesn't it make sense to focus on image and visibility to find out if it can make a difference in the success of your business, your personal financial security, and the image of the profession?

The Soundboard

To The Soundboard...

I Knew You When...

It started with a short drive to the Christiana Mall, where we were met by a huge, and new, tour bus. The destination was to be a banquet hall in the state of Maryland, city of Greenbelt.

The purpose of this affair was to give a corporation the opportunity to honor its employees, of which there are in excess of 150, with a cast of 50 supporting members, for their outstanding service during the previous business year.

The hall was lavish, just what you would have expected of a business affair: open bar, hors d' oeuvres, lilting piano in the background, crystal

chandeliers, and hundreds of people milling about, waiting for this annual event to begin.

The opening was a rousing songfest of the famous "America the Beautiful," and a reminder of those who are fighting in the Gulf War. Dinner followed. Nothing was shallow in the food department either: salads, well prepared main dishes, wine and dessert.

All of these festivities lead up to the main event of the evening, the awards. But, before this, as big business usually does, came a perusal of the year's events in the company, a look into the present goings on, and a serious look at the years ahead. "What have we done?" "What are we doing?" and "What can we do to *grow*?" The key word here is grow. One might think that the key word would have included what the company does for product output. However, this particular outfit took an approach which might be too unfamiliar to those of us in the piano business. Their approach was simply this, "Do what is necessary to grow, in an honest and forthright manner; put growth at the head of the list and keep it there, (and what we do will have to be good)." The air smacked of a high level, over-achiever's rendition of a locker room speech.

All this, looking and sounding like something Lee Iacocca would have come up with, and it could have been. This is the way big business acts. This is the attitude of those businesses which appear on the pages of the financial magazines we read too infrequently.

So, where was I? An automobile sales banquet? A real estate sale gathering, perhaps an advertising dinner? *No*, I was attending the Awards Banquet of the Jordan Kitt's Music organization, a retail piano company based in the Maryland area. A retail piano company, the likes of which this observer has never seen. That's right, a "piano guys' affair." It was unlike any piano affair, in any part of the business, I had ever been a part of. The focus was on business, and not on pianos. Sounds rather mercenary doesn't it? But on closer inspection, what I observed was one company's awareness that its personnel was the lifeblood of that company's potential. That if the company took care of its employees, and the employees took care of the company, the end products, in this case, pianos and piano service, would be of the highest quality.

Is this true, does it really work that way, or is this another way for companies to "schmooze" their employees into "putting out"? Well, having been in business for a long time myself, I was curious. Here was a great chance to peer into the horse's mouth for the truth. Her was my shot to talk to virtually all of the employees from one particular company. A company which acts in a real business manner, from the technician to the store manager, the piano mover to the boss. "How do you like working for Jordan Kitt?" I would ask, "What are conditions like where you work? Why do you teach for this outfit?" I was in my glory. Stealthily I worked the crowd. Each time I asked a leading question, the answer was returned in the same manner. What seemed to good to be true, was. Of course, every job has its ups and downs, but here people showed up at an affair, nearly the entire company, on a Sunday night, to party for each other and the company. What was really neat was the realization that what I had been teaching in my own business classes was exemplified by the Kitt organization. That is, no matter how small you are now, if you run your company as though it were Gulf Oil, then, when you grow, all mechanisms for handling that growth are already in place. That fact hit me square in the face when the CEO, Mr. McCormick, reminded his employees of the first company banquet, 20 years ago, in the basement of their small store, at the end of a string of small stores. "The rent was cheap," he joked. Even then, though Jordan Kitt's Music was relatively small, they acted *big*.

Does it work? Well, Patti Kesterson, General Manager of Wilmington Piano Company, a division of the Kitt organization, received an award for the highest selling salesperson, with over a million in sales for the last fiscal year, excluding institutional sales; I think we can safely say, *it works*!

What about the piano technology, you may ask. Further snooping at the banquet revealed that the Kitt organization, constantly seeking growth, goes out of its way to provide the service necessary to back up its unusual sales aggressiveness. Apparently, you can't put that many units on the street, and keep a good reputation, unless you are willing to back up the sale. Utilizing people such as Wendell Eaton, Dave Campbell, and Joe Bisceglie testifies to that. The result therefore, is that everything that is tied to growth is affected. It is up to the individual company to see that it is affected positively. Tying growth to quality seems to insure that positive effect.

I wasn't there in order to gain material for an article, but what was going around the Jordan Kitt organization was catching. I couldn't help myself.

Does acting like big business work in the piano industry? You bet it does!

Ralph Onesti, RTT

To The Soundboard:

I think it is worthy of note that a chapter with just five RTTs could successfully conduct a full-day seminar on tuning. The chapter was the Bluegrass Chapter of Lexington, KY. Their performance should be an encouragement to other small chapters. I am enclosing a copy of their program.

Virgil E. Smith, RTT

South Central PA Chapter Participates In Music Festival

Keith Bowman
Southeastern Pennsylvania Chapter

On March 23, Capital Area Chapter of the Pennsylvania Music Teachers Association held a Performance Festival at Lebanon Valley College in Annville, PA. 385 students, along with their teachers and parents, participated in the day's activities. These included performance judging, a theory carnival, master classes, and workshops taught by "specialists." With emphasis on the piano as a percussive instrument, two performances were given by the Marimba Ensemble of Indiana University of Pennsylvania.

South Central PA Chapter participated in the day's events with a promotion booth in the lobby of the music center. A combination of videos were run, such as The Unseen Artist, several factory tours, and The Possible Dream series, from National Piano Foundation (NPF). PTG pamphlets were used, as well as American Music Conference, and a complete display board promoting NPF membership and their literature. As the parents had time on their hands, we often had a captive audience for the viewing of videos, action model demos, and fielding various questions. One very special resource that we had was an advance copy of the awaited report from the National Commission on Music Education: Growing Up Complete — the Imperative for Music Education (these are now available from MENC for $7.95).

Our chapter also contributed to the festival by doing one of the workshops. A class was developed specially for the age group assigned, on action dynamics. This class traced development of the piano from the harpsichord, and showed how the system of levers and springs in the action of the modern piano allows the wishes of the player to be transferred from the finger to the impacted string. Emphasis was placed on the action being in good regulation in order to work properly. Of great help was the triple-life-sized action model lent by the Snyder Piano Shop. Another extra was a box full of action parts which were given out to the students, courtesy of Gary Green of Steinway. Parents and teachers also attended these classes, and were fascinated at the complex workings of a grand piano action. Due to the popularity, we plan to use this class again in the future.

Promoting PTG to the public is never guaranteed to be successful, but our chapter is committed to seizing any reasonable opportunities to do so. Even promotions of minimum effect are valuable learning experiences; as with anything, we learn by doing. In the case of this Performance Festival, we were well satisfied with the results.

The Walter Sierota Memorial Award, given annually to a PA state member for outstanding service, was received this year by Willis Snyder at the convention banquet on march 15. Willis has made contributions as an instructor on the state and national level for many years, and is known by all who have ever attended a regional or international convention. Willis has served on many committees and is a past PTG Vice President. He currently chairs the Editor Advisory Committee.

A special award was also given out this year to Sharla Kistler, who has served as treasurer for the PA State Conference for eight years. The award consisted of a tuning hammer replica made entirely of Zebrawood and Coco Bolo, suspended over an inscribed base. A past recipient of the Sierota Award, Sharla has worked tirelessly in this demanding position, stepping down to give full attention to her new duties as International Secretary-Treasurer. Asked what she will do at the next PA convention, she replied, "Go to some classes!"

Network News: Piano Technicians Survey The Retailers

Editor's Note: This article is reprinted from the Winter 1991 issue of the National Piano Foundation's Piano Notes.

Madeleine Crouch
National Piano Foundation

Over the past year, NPF has been promoting the "network" concept to members of the piano industry. Teachers, retailers, technicians, manufacturers — we all need one another to reach our goals.

Recently, members of the Dallas Chapter of the Piano Technicians Guild plugged into their local network to learn more about how they could benefit the musical community.

The concerns they felt for a continued bright future for their profession led them to form a committee. In an innovative move, chairperson Jack Wyatt sent a letter to local retailers, asking for a candid response to the question, "How can piano technicians do a better job of working with retailers?"

Wyatt didn't flinch from inviting potential criticism; in fact, he welcomed it. "What we do *well* isn't a problem. We need our dealers to point out how we can improve. Because technicians aren't trained in the retail end of things — the cost of doing business, advertising, employee benefits — we may not know the best ways to support the dealer's efforts."

After writing to piano retailers, Wyatt phoned them to encourage their participation. He asked that they send their suggestions (and yes, complaints!) on unmarked paper, not company letterhead, and assured that all comments would remain anonymous.

Wyatt's dedicated pursuit of the project resulted in an 80% response rate to his letter. Reading them was an education. "I've been tuning a long while, and at one time or another, I've been guilty of many of the things the dealers said." Suggestions for improved technician/dealer relations included promptly informing dealers about potential problems discovered during post-sale tunings, and contacting customers promptly to schedule tunings once the dealer gives the tuner a customer's phone number.

Wyatt shared the dealer critiques with his PTG chapter members, and feels that everyone has benefited in the process. Not only do dealers feel that the technicians are listening, but technicians are looking at a bigger picture than ever before.

The project was such a success that Wyatt, who serves as vice president of the Texas State Association of the PTG, was appointed by Texas PTG President Charles Fry to chair a state-wide committee for dealer/teacher/manufacturer relations. Serving with Wyatt on the committee are James Geiger of Houston and Leonard Childs of San Antonio.

The answer to getting things done always starts at the grass-roots level. All it takes is one interested and energetic person to get the ball rolling. NPF encourages local teachers, technicians and retailers to get to know one another — you'll find new professional awareness and creativity by becoming partners with the rest of the musical community.

In Memory

Daniel Shalanko

Daniel Shalanko, 53, a member of the Toronto chapter since 1979, died of apparent heart failure on January 29, 1991. He had been working in his shop in Kitchener, Ontario, at the time of his death.

Dan was among the 35 participants in the reactivation of the Toronto Chapter in 1979. He was an enthusiastic supporter of the Guild throughout the 80s and worked diligently on behalf of the chapter assisting with the Toronto convention in 1987. He was a keen participant in the chapter's grand rebuilding project.

Dan's kindest words were for former PTG President Bob Russell. Bob's one-on-one instruction with Dan in 1979 created a lasting impression.

Dan's jovial spirit will be missed by his fellow technicians. He leaves his wife Joyce and son Lorin with fond memories.

John Lillico

Augie McCollom

Augie McCollom, 81, was found dead at his home in Topeka, KS, on March 30, 1991. Augie, who became blind because of a bicycle-automobile accident at age 12, learned piano tuning in high school. He later graduated from the Kansas School for the Blind and the University of Kansas. He was an employment placement counselor for the Kansas Rehabilitation Services from 1949 to 1975. Mr. McCollom was active in the field of communications, in both amateur and commercial stations. He made several trips to South America for the establishment of radio stations.

Augie was a member of the Wichita, KS, PTG Chapter for many years, and recently a member of the Kansas City Chapter. Augie was a fine technician, and widely known for his tuning ability. The PTG mourns his passing.

Charles Muse

Dates And Deadlines

RTT Tuning and Technical Exams. Dallas Chapter Test Center. Contact: for tuning, Walter Connell (214) 942-2827; for technical, Will Nieberding (214) 247-4084

June 8, 1991
RTT Tuning and Technical Exams. Puget Sound Test Center. Application deadline June 1, 1991. Contact: Wayne Matley; 2502 Harmony Lane; Enumclaw, WA 98022 (206) 825-6921

July 13-16, 1991
RTT Tuning and Technical Exams. 34th International PTG Convention and Technical Institute, Philadelphia, PA Contact: Michael Travis; P.O. Box 576, Greenbelt, MD 20768 (301) 441-3555

July 13-17, 1991
34th International PTG Convention and Technical Institute. Philadelphia, PA. Contact: Home Office, 4510 Belleview, St. 100, Kansas City, MO 64111. (816) 753-7747.

August 17, 1991
RTT Tuning and Technical Exams. Northern California Exam Board. Application deadline: July 17th, 1991. Contact: Neil Panton, 5 Cedar Court, Menlo Park, CA 95025 (415) 854-8038

October 11-13, 1991
RTT Tuning and Technical Exams. Texas State Seminar. Austin, TX, Chapter Test Center. Application deadline: Sept. 11, 1991. Contact: Bill Cory, 711 Landon Lane, Austin, TX 78705. (512) 472-9358.

Membership Status

Northeast Region	824
Northeast RTTs	529
Southeast Region	591
Southeast RTTs	388
South Central Region	315
South Central RTTs	208
Central East Region	625
Central East RTTs	392
Central West Region	372
Central West RTTs	247
Western Region	596
Western RTTs	390
Pacific NW Region	346
Pacific NW RTTs	230
Total Membership	3669
Total RTTs	2384

PTG's 34th Annual Convention & Technical Institute

Welcome... to PTG's 34th Annual Convention and Technical Institute. An unbeatable array of educational opportunities awaits you in Philadelphia in July.

An outstanding Technical Institute will feature a wide range of classes. One-on-one tutoring in any piano-related subject will be available. Manufacturers and suppliers will exhibit the latest products, supplies and services. And there will be opportunities to meet and share information with technicians from all over the world. Spouses can enjoy a full activity program, including a luncheon cruise and city tour. Watch for a complete listing next month.

Whatever your taste, Philadelphia will offer you plenty of things to see and do, all in one of America's most historic areas.

To register, simply complete the form below and send it with the appropriate fees to the address shown.

Convention Registration Form

Name: _____ Telephone: _____

Nickname for badge (if different from above): _____

Home address: _____

City: _____ State/Province: _____ Zip: _____

Country: _____ Are you visually impaired? Yes ___ No ___

Are you a Guild member? Yes ___ No ___ If yes, what chapter? _____

Region: _____ Chapter #: _____

Spouse's name (if registering): _____ Spouse nickname: _____

Is he or she a member of the PTG Auxiliary? Yes ____ No ____

Registration Fees

Quantity		*Before June 10*	*After June 10*	*Total*	
_____	Guild member:*	$ 120	$140	_____	400-3550-100
_____	Non-member:	170	190	_____	400-3550-200
_____	Auxiliary member:*	45	55	_____	400-3550-300
_____	Non-Auxiliary spouse:	55	65	_____	400-3550-400
_____	Tutoring	60	60	_____	400-3610-100
_____	Auxiliary Tour of Philadelphia	37	37	_____	400-3630-000
_____	Banquet ticket:	30	30	_____	400-3590-000
_____	Closing luncheon:	20	20	_____	400-3600-000
	Total enclosed			_____	

Please charge to my credit card: Visa _____ MasterCard _____

Card Number: _____ Expiration Date: _____

**Note: All membership dues and fees must be paid in full before the convention begins*

Send To:
Piano Technicians Guild, Inc.,
4510 Belleview, Suite 100,
Kansas City, MO 64111

Office Use Only

Date: _____ Amount: _____ Check # _____ Mem. #: _____ Badge: _____