
PIANO TECHNICIANS
Journal
Official Publication of the Piano Technicians Guild
October 1998
Vol. 41 • #10


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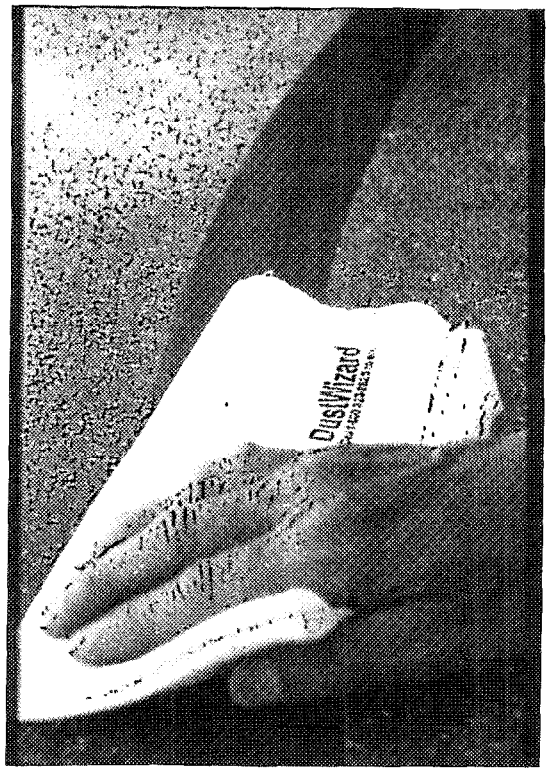

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David Hanzlick, CAE
Publisher/Executive Director

Steve Brady, RPT
Editor

Jim Coleman Sr., RPT
Del Fandrich, RPT
Contributing Editors

Jeannie Grassi, RPT
Editorial Assistant

Susan Kline, RPT
Anita Sullivan
Feature Writers

Joe Zeman
Director of Communications

Sandy Roady
Director of Member Services

Jerri Dowdy
Assistant to the Executive Director

Catherine Wilane
Director of Finance and Administration

Midge Sheldon
Advertising/Merchandising Coordinator

Home Office
Phone: 816-753-7747
FAX: 816-531-0070
E-Mail: ptg@ptg.org

Editorial

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205 McGraw Street • Seattle, WA 98109
Fax: 1-206-285-7610 • E-Mail: sbrady@u.washington.edu.

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GUEST EDITORIAL

Are Piano Technicians Maintaining Old Instruments for too Long?

By Ralph Long, RPT
Ware Herts, England

Reading my *Piano Technicians Journal* just recently, I read an article stating that pianos were built to last only 30 years. I know, and many of us are aware, that many instruments are still around after 150 years and sometimes longer.

I think I am correct, but I cannot be absolutely emphatic on this, in saying that many cheap instruments in the British Isles were only meant to last 25 years and good quality instruments approximately 50 years. I do know that many companies like Steinway and Bösendorfer will not accept any of their instruments back for re-build and re-sale after so many years. Are we restoring old pianos that ought to be on the scrap heap? Or should we be refusing to carry out work on them in favor of younger instruments? I find so many people are buying old pianos that should not have been restored in the first place.

Some people think that old pianos are better than new ones. Why? Who has put that in their minds? Why do people think pianos are expensive, when they are cheaper today than in years gone by, when other goods with a shorter life span than pianos have rocketed in price?

Today new pianos are being made with much more stability, better design, and better scaling – altogether better value for the money. Do we need to educate the general public or are we allowing electronic keyboards to destroy our industry? Although I think that keyboards have their rightful place, and I accept them for what they are, I often find when comparing prices, pianos are a better value for money.

So why do we still perpetuate these old instruments? Often the minimum amount of restoration work has been carried out on these instruments, which are re-sold at prices that should never be asked. They are often restored in workshops with no heat and high humidity within a very short space of time and are sold to people who take them into centrally heated homes. The soundboards crack, wrest pins become loose in the plank, action parts come loose, warping sometimes takes place, regulating goes awry and generally the piano is a write-off unless you spend a lot more money on the instrument - more than the piano is worth. Some people still wish to keep these old instruments going when really we should be encouraging people to replace them with better quality instruments, younger pianos or new ones.

Recently I went to a client whose instrument had belonged to her great-grandmother and was approximately 90 years old. The instrument was completely worn out, and I was asked if I could make it into a playable instrument. It was an old straight-strung over-damper piano and very well worn, to the extent that everything would need to be replaced. I gave her an approximate cost to restore the instrument to make her realize what it would cost to repair, what the value of the instrument would be after the work had been carried out, against what the cost of a new instrument of the same type and caliber would be. I also explained to her that I could not guarantee how long the instrument would last, due to the fact that the fibers of the timber were already showing signs of breaking down. She saw the sense of the points that I made. I stated that I would not carry out the work unless she took full responsibility for any failure of the basic structure of the instrument.

Please submit tuning and technical articles, queries, tips, etc., to me:
Steve Brady*, Journal *Editor
205 McGraw Street • Seattle, WA 98109
Fax: 1-206-285-7610
E-Mail: sbrady@u.washington.edu

Some instruments are still in quite excellent condition due to their use, how well they have been looked after, and the conditions they have been subjected to, and

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only require the minimum amount of work being carried out to keep them going. Many instruments have badly worn hammers that have been re-faced more times than they should, when by rights the hammers should have been recovered or replaced. Should we be restoring these instruments? Or should we be trying to persuade our clients to replace their instruments with new ones? Should we be trying to help our piano industry, not destroy it? Are we restoring pianos and in so doing killing the industry? Should we be recommending a life span for a piano? I feel we should be refusing to restore some of these old instruments whose life span has now ceased, and not preserving instruments that have had their day.

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COLUMNS & COMMENTS

DEPARTMENTS

IN ADDITION

COVER ART

Images from the 1998 PTG Convention & Technical Institute in Providence, RI.

PIANO TECHNICIANS **Journal**

Volume 41 • Number 10 • October 1998

Build Your Tuning Business!

"Now that I'm installing Dampp-Chaser Systems, I'm tuning twice the number of pianos."

–Wally Meissner
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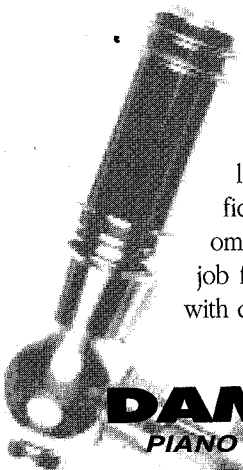

The circle of shared information about the System then widens. Your client tells her fellow choir members and symphony volunteers about the positive change in her piano (music lovers associate with *other* music lovers). Her confidence in you is greater than ever. She freely recommends you to others, knowing you will do a great job for them, too. And, as you protect more pianos with climate control, *the referrals multiply!*

Build your regulating and voicing business with Climate Control!

According to experienced Dampp-Chaser installers, your tuning client experiences a change in attitude toward the piano after the installation of a System—she begins to place more value on the piano as a source of enjoyment.

With a System, the piano sounds better which lends the perception that her playing is better. Or, she observes that her child's playing has improved. And, she is pleased that the child is willing to practice for longer periods. (Children also recognize the enhancement of tuning, touch and tone.)

Each time your client notices the System's light panel under the keyboard, she is conscious that the System is working, constantly protecting her piano. When the blinking light calls for more water in the humidifier, she reaches for the watering can immediately. As she pours in fresh water, she is aware the System has used, to good purpose, the water she added two weeks ago. Each time she "waters the piano," the emotional bond with the piano is strengthened.

Meanwhile, her regard for you as a professional has grown. In her eyes, you have taken her average-sounding piano (or highly unstable piano) and converted it to an instrument of which she is proud, an instrument that is dependable and predictable.

More than ever, she trusts and respects your opinion. So, when you suggest ways you can make even more improvements through regulation and voicing, she is more receptive to your proposal. (A written proposal is more effective. For a proposal example, buy the PTG's *Business Resource Manual,* $20.)

Remember, the Climate Control System you recommended did just what you said it would do. When you explain how voicing or regulation will make a noticeable improvement to the sound and yield greater enjoyment, *she will follow your advice again!*

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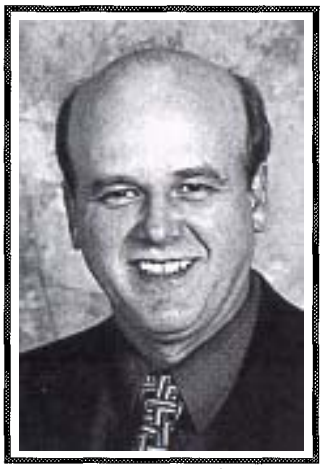

David P. Durben, RPT
PTG President

Getting More Than You Give

This month's *Journal* will dedicate a number of pages to a recap of the Providence convention. By all accounts, it was an outstanding event! There was something for everyone in Providence, and the activities and programs that were highlighted by the Institute Committee in previous *Journal* issues certainly surpassed those descriptions.

I would like to review the Institute and Convention as a member benefit, and show yet another reason for not only being a member, but being an active member. The first thing we need to establish is the fact that the registration fees we pay cover the immediate costs of travel, shipping, printing, etc. that will be incurred regardless of the attendance numbers. In a good year (and it rarely happens otherwise), we come out in the black. But what about the many hours invested by volunteers and staff in organizing? It would be difficult, perhaps impossible to tabulate them, yet their value to the event is undeniable. Did you benefit from them?

And then, what of the hours spent by volunteer teachers putting their classes together? There is no way that the registration fee can cover that. Therefore, it is a benefit beyond the fee. Did you get a return on that investment?

How about the examinations that were given? It is often said that the RPT designation is only one of the reasons for taking the tests, and that the evaluation of one's tuning is a great learning experience whether you pass or fail. The fee for taking the exam couldn't begin to compensate the examiners for their time, so their contribution is also a benefit beyond the fee. But of course, the only way to "cash in" is to "pony up."

Similarly, have you considered the idea that the examiners and teachers might also be learning something? One of the greatest benefits of teaching and testing is said to be the advancement of one's own education. So it behooves us to ask ourselves whether we've taken advantage of that member benefit. How much have we invested there?

Now we have covered some of what is reported about the Convention and Institute, but there is much more that doesn't necessarily get into the *Journal.* Perhaps the greatest member benefit one might derive from attending is the informal association with peers. The connections you make, conversations you get into, ideas and innovations that might not have made it into a formal classroom setting, are all part of the member benefit that we call the Annual Convention and Institute.

Remember that just as it is true for many other opportunities, it is true for PTG: you benefit in direct proportion to your investment. Participate fully, and you will get the full benefit!

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Why Do You Belong to the Piano Technicians Guild? — Part II

People belong to an association for many different reasons, as we discussed in my previous column. Most members fit within seven broad and overlapping types. Each member is, of course, valued for his or her own unique contribution to the work of the organization.

David Hanzlick, CAE
PTG Executive Director

- Some members join for the information they receive through the mail (Type 1). Other members will attend meetings and conventions that meet their specific needs (Type 2).
- Some members enjoy taking an active role in shaping the direction of their organization by serving in offices and on committees (Type 3). Other members belong strictly because they know they are receiving more value in benefits than their dues cost (Type 4).
- Some members seek ongoing development of their professional knowledge and skills (Type 5). Other members particularly enjoy the status that membership confers (Type 6). Still other members appreciate and promote the values of the organization (Type 7).

The challenge for any organization is to provide a menu of product and service benefits to meet the diverse needs and expectations of its members. Membership benefits fall into one of two broad categories. Intangible benefits are those that often benefit everyone in an industry. It is difficult to establish the monetary value of intangible benefits. Tangible benefits, by contrast, can be seen and felt by individual members and have a definite value.

A sampling of the intangible benefits provided by the Piano Technicians Guild are listed here with the membership types to which they might appeal. As you read through the benefits, be sure to keep in mind your own membership type and the benefits that are of particular value to you.

- Music promotion activities like our work in promoting the recent National Piano Month observance and highlighting the importance of music education to the cognitive development of young children (Types 6 & 7);
- Industry relations through our presence at the National Association of Music Merchants trade show, the Music Teachers National Association convention, and the Piano Technicians Guild Foundation Scholarship for piano teachers (Types 6 & 7);
- Peer support, assistance, fellowship through local chapters, regional conferences, and the Annual Convention and Technical Institute (Types 2, 3, 4, 6, 7).

Interestingly enough, many intangible benefits, like industry relations and public education, benefit non-members to the same extent as members. Too often, non-members are reluctant to pay for benefits they receive without paying dues. In the association field, we call these people "free riders." On the other hand, many members appreciate the Guild's visibility in the wider community. Their support of the organization is reinforced as a result.

PTG also offers a wide range of tangible benefits. Here, again, is a partial listing with the membership types they most likely serve.

- The *Piano Technicians Journal* is a highly valued benefit that is included in the cost of membership (Types 1, 3, 4, 5, 6, 7). Non-members may subscribe, but at an annual rate of $95.
- The Annual Piano Technicians Guild Convention and Technical Institute is another important benefit (Types 2, 3, 4, 5, 6, 7). The Institute is, by any measure, a tremendous value. While the going rate for most continuing education programs in many fields is $100 per day, the 1998 Institute offered three and a half days of the best technical instruction available at an early registration fee of $195. Add the exhibit hall, the evening receptions and the opportunity to talk with the leading experts in the field, and you have a tremendous bargain. I hope you enjoy the convention coverage provided by this issue of the *Journal*. Make plans now to be with us in Kansas City, July 21-25, 1999, for the 42nd Annual!
- The Registered Piano Technician education and examination process provides the opportunity for technicians to develop their skills and demonstrate their competence to their peers through a series of rigorous examinations. The Registered Piano Technician program also serves the public by providing the only standard of proven competence in the piano service industry (Types 1, 2, 3, 4, 5, 6, 7).
- A wide range of high quality client relations and continuing education materials have been developed by PTG over the years and are available for purchase by members at a substantial discount (Types 1, 4, 5, 6, 7).
- Business development information is provided through many sources, including the Annual Institute, regional meetings, and the pages of the *Journal* (Types 1, 4, 5). Please be sure to read the new quarterly feature in this *Journal*, "Taxing Matters," in which a CPA provides tax information tailored to piano technicians.
- A $1000 death benefit and a $1000 accidental death benefit for members is included in members' annual dues (Type 1, 3, 4).
- PTG also endorses several important insurance options for purchase by members (Types 1, 4). Among them, business liability and tool and bailee insurance are available exclusively to members through Jerry Kiser of Potter, Leonard and Cahan (800/548-8857); health, disability, supplemental health, nursing home and home health, among other coverages are available through Ralph S. Passman & Associates (800/255-6029). Additional life coverage is also available through Ms. Lupe Sherman, of Gallagher Woodsmall, (800) 934-4624.

From this partial list of membership benefits, both tangible and intangible, I hope you have found a few that meet your individual needs and explain, at least in part, why you belong to the Piano Technicians Guild.

As always, your Regional Vice President and I welcome any comments or questions you may have about the benefits of membership. We would also appreciate any thoughts you might have on how PTG can better meet your needs.

The 7/8 Keyboard

Unfortunately, Steinbuhler's "solution" is not a panacea. The standard keyboard evolved over centuries to accommodate both hand and armspan. No one quarrels with the 48" span, and not all small hands encounter insuperable obstacles. Chopin was a small, fine-featured man whose post-mortem hand cast by Clesinger reveals a small, delicate hand with slender fingers. The photographs of Clesinger's cast mislead the viewer into regarding Chopin's hand as "large." Chopin was freshly deceased, and his terminal illness had exhausted all reserves of energy, including fat and muscle mass. The Daguerreotype of 1849 shows a plethoric, exhausted physiognomy attributable to the fluid retention of preterminal heart failure. The chest is hyperexpanded due to ravages of innumerable cycles of infection and scarring. But clothing conceals all else except the hand, which looks wasted, with dimples between the hand bones (metacarpals). As his hand lost intrinsic muscle mass, the naturally slender fingers became more so in appearance. It was not the size of Chopin's hand that allowed him such incredible virtuosity and elegance at the keyboard; all who observed him commented upon the "flexibility" or suppleness of his hand. Anyone who has attempted the Opus 10, No #1 Etude will discover that Chopin intended a small hand to negotiate this, which is precisely why he wrote it. How one uses the hand is far more important than one's natural endowment (although natural endowment certainly matters).

Most of us reach a well-defined limit with "hand-stretching" exercises, beyond which further self-torture is pointless. Rare individuals have enhanced elasticity, such as Marfan's syndrome, which may have affected Paganini. There is no evidence that Chopin had Marfan's syndrome, but his hand seemed to "expand" and he appeared to be comfortable with stretches that anatomically seemed inexplicable. It was this "suppleness," rather than size, which helped confer such versatility. Chopin's early biographer, Niecks (1888), commented upon such first-hand observations in his excellent two-volume work, which is still available.

But I digress. The Steinbuhler 42" keyboard will lend itself to the small hand with very slender fingers. I suspect Linda Gould possesses such a hand, and would find 12-percent octave condensation extremely rewarding. Unfortunately, many accomplished keyboard musicians possess small hands with wide, "square," or "pudgy" fingers. These musicians already encounter problems with notes D, G, and A, particularly the 3rd finger (which is normally the widest of the non-thumb fingers) wedging itself against the adjacent black keys. One attempts to compensate by altering the fingering, substituting the index for the 3rd finger. The standard 48" keyboard has marginal tolerance for large-boned musicians, and a 42" keyboard would probably be unplayable. Mr. Steinbuhler doesn't address the very important parameter of finger width (otherwise categorized into small-boned, medium-boned, large-boned) which arguably constitutes a more fundamentally significant intrinsic limitation.

It is certainly possible that Mr. Steinbuhler discussed this issue (hand structure, as opposed to finger span) at the PNW Regional Conference, but this is entirely omitted from the *Journal* article, and may mislead technicians into unguarded enthusiasm for the 42" keyboard. An unwary technician would be unpleasantly surprised when his customer first tries the newly installed retrofit. Obviously there is a place for the 42" keyboard, but it is not for all small hands, nor perhaps even for the majority of small hands. Only those with both a small hand and slender fingers would profit from such a retrofit.

Ideally, a candidate for the 42" keyboard should try it out before committing himself/herself to an expensive retrofit. Once the musician is convinced of the advantage, the technician may safely proceed.

I had one additional reservation regarding the 42" keyboard, and this concerns Figure 4 of Steinbuhler's drawing. He locates the touch point nicely centered upon the white key, between the key front and the adjacent sharp. But this does not reflect reality when performing advanced piano music. Only the thumb engages the white key at this node; all the other fingers interact with the white key between the sharps or very close to the sharp fronts. This would increase the tendency for the key to "rock" on its fulcrum, accelerating wear at the balance hole. I suspect Mr. Steinbuhler's engineering to be only as good as the accuracy of information regarding execution, and it may be that his notion of "attack" is rather naïve. Even so, most musicians who would legitimately profit from a 42" keyboard would accept more frequent balance rail servicing, so I don't regard this as a fundamental flaw.

I'm convinced Mr. Steinbuhler has made a substantive contribution that may well influence piano pedagogy, but its eventual niche may be much smaller than he anticipated.

— Richard M. Brown, RPT
Portland, OR Chapter

David Steinbuhler Responds:

Thank you for sharing Dr. Brown's letter with me. I appreciate the continuing dialogue about the 7/8 keyboard.

We had a tremendous response at the PTG conference in Rhode Island where we had a booth and displayed pianos with the 7/8 keyboards. For us, the highlight of the show was Karen Hudson-Brown's "life changing experience." On Friday, she discovered the D.S. Keyboard and began to experience how much easier everything is to play and, by Sunday, was using it in the program Festival of Temperaments.

The Festival had five grand pianos tuned to five different temperaments, which Karen demonstrated by playing each of the five pianos. The discovery of the piano with the 7/8 keyboard was so important to her that she elected to use it as one of the five pianos by tuning it to her favorite temperament. This courageous woman then proceeded to play difficult repertoires on the pianos, going from the 48" keyboards to the 42" keyboard to the 48" keyboards and back again. This with only two days to prepare! Karen wrote, "Thank you for opening a whole new world to me."

I feel deeply that this is a very important project and I very much appreciate the input we have been getting. Dr. Brown had concerns about the touch point of the keys and

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especially about the smaller distance between the sharps. As with many aspects of the piano, there are trade-offs and compromises. We need this kind of input to facilitate the evolution of the optimum design for the keyboards.

Dr. Brown raises the question of where the average touch point of the keys should be and suggests that it should be more to the rear than depicted in my July article. My notion of "attack" is rather naive, and I am completely open to moving the touch point further back.

As for the distance between the sharps, let me say that this is an open question. How thin should we make the sharps? At present we are making keyboards where the difference in distance between the sharps is smaller by about the thickness of a quarter.

It is useful to think in terms of small-boned, medium-boned and large-boned hands. I understand that Arthur Rubinstein had large-boned hands and would feel the black key on either side of his fingers. This is now the experience of smaller, medium-boned hands on our 7/8 keyboard. I agree it takes some getting used to, and the keyboard needs to be tried before making the decision for a retrofit. To that end, we are opening a show room in Titusville, Pa., where pianists can come and play on the keyboards, both retrofit and new pianos, at their leisure.

I welcome feedback from your readership and encourage them to contact me with their comments. A D.S. Keyboards website is currently under construction and will be on-line within a month.

— David Steinbuhler
President

Getting More Than You Bargained For

It began in July 1947. My Dad and I went to a piano tuners convention. We drove to Detroit in his 1939 Oldsmobile. As I had joined the American Society of Piano Technicians in 1946 I was anxious to see what happened. Here I was, a 28-year-old fledgling. I had not yet understood why those hammers were so slow coming back. Or, what my Dad meant when he said, "Always narrow your fifths and widen your fourths." My Dad was my teacher and mentor. He went to the old Oliver C. Faust School of Tuning in Boston in 1922.

I will never forget my first impression in Detroit. Here was a bunch of old gray-haired (and some with no hair) guys rushing around. Names like Gearman, Stonaker, Davis, Hoskins, etc. What impressed me most was their willingness to share with me their knowledge. They welcomed me with open arms. Perhaps my southern drawl had something to do with it. As I recall, there were very few southerners there. Their attitude and accepting me as one of them convinced me everlastingly of the importance of the organization. Without that first impression, I doubt I would have made it.

Through the intervening years I have been to many conventions. Not all, maybe half, all over the U.S. They kept getting better and better. It reached that point where it was difficult to select all the classes I wanted to attend. Now, at age 78, my reason for going to Providence was not to go to classes but to see and renew old friendships and see the changes in the piano world. I have always tried to get publicity for the Guild at every convention. This year I wrote to the *Providence Journal*, my intention to give a piano tuning to some local deserving organization or individual. We had 10 calls wanting the tuning! I selected two of the 10 and have never seen a more appreciative group in my life. At the banquet on Friday evening I met Fred Archleta, from Charlotte, NC (he is a fledgling like I was). I invited him to go with me on the second tuning. He was anxious to go and, as it turned out, he was a great help to me. I shared many things with him. Now we have come full circle — I am one of the old guys sharing with a beginner. It's great to go to conventions. You always get more than you bargained for.

— Clayton Harmon, RPT
Western Carolinas Chapter

Thoughts on the Design of Bass Strings

The 12th root of two is about 1.0594631, not 1.0694631. If one were to set up a chromatic scale based upon this ratio, the intervals would be stretched beyond recognition. A tritone would sound like a shrunken 5th, and an octave would be stretched a little less than 200 cents.

— Jim Ellis, RPT
Knoxville, TN Chapter

Richard Brown responds:

Jim is correct about the decimal value of the 12th root of two. Unfortunately, there are two errors: the typographical numerical substitution in the decimal equivalent (mine), and the algebraic expression of the 12th root of two (PTJ's). Thanks for spotting it.

— Richard M. Brown, RPT
Portland, OR Chapter

Correction

A typesetting error in Richard Brown's article in the August 1998 issue resulted in the algebraic notation at the bottom of page 23 being rendered:

$$12\sqrt{2}$$

instead of

$$\sqrt[12]{2}$$

(the correct notation).

We apologize for any confusion or inconvenience which may have resulted from this error. — ***S.B.***

Tips, Tools & Techniques

Alternate Use for Backcheck Tool

The hardwood tool that used to be sold to regulate spinet backchecks (see Figure 1) is perfect for tapping in stubborn hinge pins. The hammer, or tuning hammer, or whatever you are using to tap with, is kept far from the case, and the notch of the tool holds the pin without slipping and scratching the varnish.

— Susan Kline, RPT
Journal *Feature Writer*

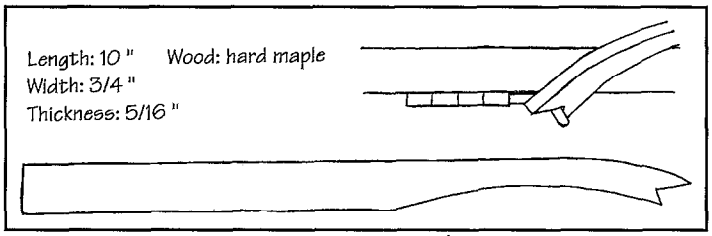

Figure 1 — Hardwood spinet backcheck regulator used as lid hinge-pin installer.

Capstan Tool for Chickering Quarter Grands

Some of the old Chickering Quarter Grands contain actions which are so compressed it doesn't seem possible to regulate the capstans because clearance between the key buttons and the jacks is so small. After trying to use a normal pointed capstan tool for this (and giving up in frustration) I hit upon the idea of using a small knitting needle. The #1 knitting needle shown in Figure 2 is slender and flexible enough to fit through the tiny space, yet strong enough to turn the capstan without becoming permanently bent.

— Susan Willanger, RPT
Seattle Chapter

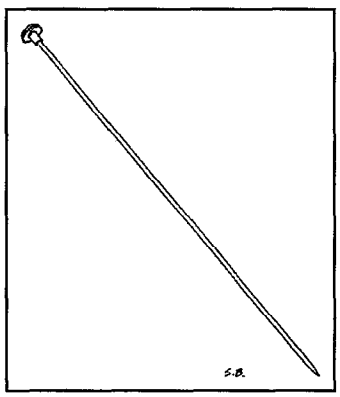

Figure 2 — Size #1 Knitting needle – the ideal capstan regulator for Chickering Quarter Grands.

Lubricating Spring Slots

Looking for a lubricant for the spring slot in the repetition lever (balancier) but are at a loss? Find a good ol' carpenter's pencil and use your pocket knife (you do carry a nice sharp pocket knife, don't you?) and cut away enough wood on the top to expose a long section of the graphite within, but keeping enough of the wood to reinforce the core. Thin the side walls until you have a dandy little tool to sneak into the spring slot and deposit a "Baby Bear" amount (j-u-s-t right) of graphite. This works especially well when you are replacing the springs and have better access than when the wippens are in situ. The pencils are relatively cheap, so you can experiment with them and come up with other uses ... then tell me about them!

— Bob Bartnik
Reprinted from The Richmond Update, *newsletter of the Richmond, VA Chapter*

Hex-to-Combination Adapter for Power Screwdriver

This is such a great idea – it's surprising no one has invented it until now. Ken Amend, RPT, of Salem, Oregon, has developed this handy adapter which snaps into your power screwdriver like a screwdriver bit. Then, you slip any combination tool you like into the other end and tighten the collet by turning the rubber sleeve. Power-driven combination tools such as the let-off regulator and drop-screw regulator can make short work of initial rough-in regulation when new action parts are installed.

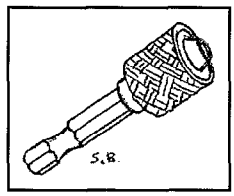

Figure 3 — Combination adapter for power screwdriver.

The adapter is available for $12 from Ken Amend at:
3352 Holiday Dr. S., Salem, OR 97302, 1-800-489-8920, kamend@open.org

— Steve Brady, RPT
Journal *Editor*

NOTICE — To PTG members and all *Journal* subscribers . . .

Effective immediately — the Home Office will no longer mail out more than three (3) back *Journals* to anyone (excluding those outside the US) who do not notify the Home Office within three (3) months of an address change or of lost/missing issues.

If you should move, your notice of new addresses must be called or mailed in to the HO within three months of the move.

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What Makes a Piano Truly "World Class"?

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Young Chang, winner of numerous awards and competitions from around the world, is the first piano manufacturer to receive the prestigious ISO 9001 approval for quality manufacturing and design.

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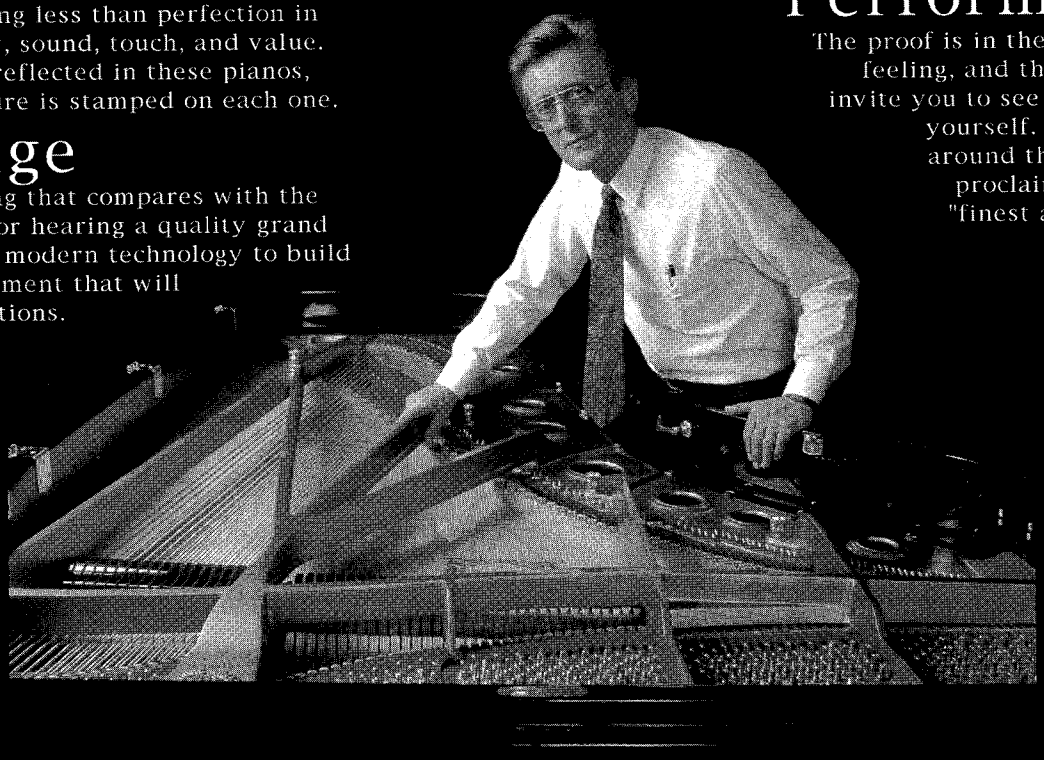
The proof is in the playing, the feeling, and the sound. We invite you to see and hear for yourself. Join experts around the world who proclaim this as our "finest achievement."



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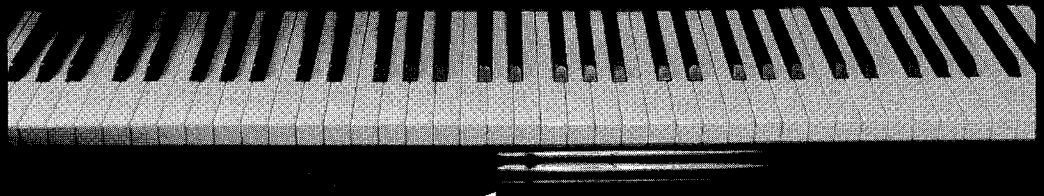

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Steinway Grand "Fuzzy Buzz"

Q: I regularly service a Steinway B grand, approximately twenty years old. For many years it has had a problem with a number of notes in the mid treble. Despite my best attempts to locate the source, I have been unable to locate a faint, "fuzzy buzz" in this region 1-1/2 octaves above middle C. The instrument has spent its life in an "easy," moderate climate.

Although it sounds like a soundboard-related noise, I have set the strings on the bridges, experimented with the string/capo d'astro bar relationship, tried muting duplex string segments, checked action parts for loose joints and pinning, reshaped hammers, voiced, and listened under the piano and inside it while it was being played. I have cleaned underneath the plate, blown out the whole soundboard area with my vacuum, and checked for obvious soundboard and rib problems, even for dried glue remnants on the edges. I have always been able to find a remedy for other Steinway treble problems, but not this one.

Has anyone out there had this experience and solved the problem? Are there any methods for "getting a fix" on the source of elusive soundboard noises? My customer is frustrated and so am I! Thanks for your help!

— Tom Armstrong, RPT
Monterey Bay Chapter, California

A: Newton Hunt, RPT: With the entire duplex system muted it is easier to locate the problem if it is not in the duplex. If it is in the duplex it may well be but one or two unisons causing the problem so some experiments are in order. Further, I would mute the undamped strings at the top end to eliminate them as a source. Good hunting!

A: Michael Jorgensen, RPT: This rings a bell. String defect? Sounds unlikely, but — I service a late 70s Steinway & Sons B which had a raucous metallic buzz with a pulse of about six bps on two notes in the same area. It created difficulty tuning unisons and sounded "hollow" to the customer. The noise had a pitch equal to three octaves above the fundamental plus one note. Four RPTs, including myself, had searched high and wide with no luck. (Everything mentioned in your post). "Harmonic in the board, perhaps?" or a "sympathetic buzz?" but no solutions. Some tried to voice it out, mute out duplexes, and one relocated a hammer head. (Like curing the cancer by killing the patient.)

After a decade of defeat, I asked if anyone had ever replaced the strings on those unisons. None had, so we agreed to it as a "long shot" experiment. Wow! The harmonic was still there but it no longer had any beats and lost much of its obnoxious metallic quality. The notes then sounded like the others that also contain that harmonic.

A: Avery Todd, RPT: I know you're going to get mostly "shots in the dark," so here's another one. Along with Mike Jorgenson's suggestion about replacing strings, I'd also carefully check the bridge pinning and especially the notching in that area. I had a buzzing problem once that was caused by the string laying on a little wood in the speaking length because of bad notching and/or bad placement of pins. That's one thing I didn't see mentioned in the litany of things checked, so – it's worth a shot.

A: Jim Krentzel: I've noticed this problem on a few B's over the years, and the problem was that the "bell" bolt wasn't snug enough. If there is a slight gap between the bottom of the bolt head and the top of the plate, you will get a fuzzy tone on a few mid-treble notes. I'm not suggesting that you really crank this bolt down, usually 1/2 turn is enough.

A: Horace Greeley, RPT: It might also be that the bell bolt is too tight. Bear in mind that the function of the bell bolt is the relatively minute adjustment of bearing, and play away.

A: Kent Swafford, RPT: I was embarrassed this past year to find similar noises being produced in a B as the result of loose bolts holding the removable plate strut. Boy, I thought I had checked those!

A: Jim Harvey, RPT: Although Tom has documented his case well, I'm going to play with the "sounds like" portion instead of assuming string/belly areas. Since this sound could be telegraphed from other areas, and be misunderconstrued for something else, let's explore...

- sostenuto mounting, blade pivot bushings, and "proximities" to other stuff;
- lyre braces (nah — too obvious);
- lock assembly (if aftermarket kludge appended)
- topboard long hinge pin (don't think so)
- lid prop and related (especially when down)
- trapwork underlevers, mounts and pinning
- damper wire sockets;
- bridge cutout around or below plate strut.
- damper upstop rail
- the 'bell' (there have been stories)

Finally, although I've heard of this only once (and Paul Monroe found it), there was an incident where the shelf portion of a nose bolt failed to contact the bottom of a plate strut. Same general area (and phenomenon) as described here. In this case, the gap was so small; it could be called microscopic – just enough to cause a whisper buzz.

A: Tom McNeil, RPT: Here are two more shots in the dark:

The single most difficult-to-solve "fuzzy buzz" I've ever encountered eluded several highly experienced technicians, including Yours Truly, for a couple of years. We even worked in various team combinations, to no avail. Turned out to be a lump of hard glue on the shift iron guide dowel below the keybed. The shift iron would buzz against it, but only under certain conditions that were elusive to duplicate. Seems like we could have zeroed in on it earlier, but we could not.

Another buzz (in a D, but it could happen in a B just as well) came from the small hinges attaching the folding lip to the fallboard. This was easy to identify, and surely not the problem your correspondent encounters. But, for the sake of someone who might be helped by the information: If you remove these small hinges, you can un-pin them. A small hammer, an appropriately sized pin punch and a vise are all you need. With the pin removed, you can use the vise to pinch the barrels of the hinges very slightly to provide an interference fit on the pin. (Alternatively, you could install new pins a few thousandths of an inch larger in diameter, if you have

the right diameter rod lying around the shop.) If the lip of the fallboard is loose enough to fall of its own weight, you might want to pursue this improvement, whether or not it's producing noise at the moment.

A: John Minor, RPT: I found buzzing that was caused by a loose let-off rail dowel inside the brass rail at the treble end. To determine if this is the case, just gently tap on the end of the dowel with a finger or knuckle at the treble bracket with the action out.

A: Newton Hunt, RPT: That rail has screws to hold it secure, which should be tightened, but that one is not one I have heard of before. Good one, John.

Regulating Jacks to Pear-Shaped Knuckles

Q: I recently chose to try to lighten the action on a medium-aged Baldwin-product "baby" grand by re-regulating the action. I found the hammer shanks had "Thayer" knuckles. Also, there were little notches on the inside edges of the jack windows in the repetition levers.

The jacks were all slightly behind (say, 2, 3, or 4/64ths) the notches (behind meaning towards the rear of the lever). I moved the jacks so the back of the jack was even with the notches. This (among other changes) helped reduce the touchweight. But, perhaps due to the deformation of the knuckles, I had to move some of the jacks back toward their former position to get 100 percent reliable, speedy repetition at all hammer speeds.

None of the sources I have discuss how to set the jacks when Thayer knuckles were used. Did the notches in the jack windows mean anything? How should a person set the position of the jacks?

No catalog I have even shows a picture of the Thayer knuckle. Are these shanks still available? If a person could not find replacements, which of the usually available shanks would it be best to use?

— William B. Theisen, RPT
North Central Wisconsin Chapter

A: Although I'm not familiar with the name "Thayer knuckle," I assume that you are referring to what I've always called the "pear-shaped" knuckle, found on some older Baldwin products (see fig. 1). I don't know why Baldwin used this knuckle in some of their pianos, but I've found that if the shape is correct, they can be regulated fairly easily.

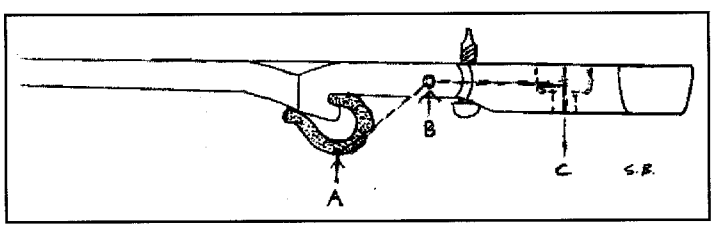

Figure 1 - Pear-shaped hammer-shank knuckle.

First, and I suspect that your action would benefit from this, make sure that the knuckle is essentially round at the bottom where the jack will be contacting it. If necessary, restore the rounded profile by bolstering the contact surface with a strip of bushing cloth drawn between the buckskin and the core material.

The notches in the jack windows are not unique to this type of action. I've seen jack-window notches of one kind or another on many different makes of pianos. In my experience, these notches work well as reference points, but you can't count on the position of the notch being the ideal point for the back edge of the jack to line up to. Once you've made sure the shape of the knuckles is good, establish the ideal location of a jack or two in each section by turning the jack-regulating screw clockwise until the jack just "cheats" or skips out when you play a sharp blow while restraining the hammer with your other hand. Having found the cheat point, turn the screw counterclockwise in small increments until the jack just doesn't cheat anymore. Then, to allow for changes taking place which might induce the jack to cheat later on, give the regulating screw one more tweak – perhaps a quarter turn – in the counterclockwise direction.

At this point you've located the optimum position for that jack to that knuckle. To do the rest of the jacks, regulate them until they line up in the same position relative to the notches that your samples do, or simply line them up to your end samples with a straight edge. Then check for cheaters by lightly restraining the hammers while sharply striking the keys, one at a time. Make any further adjustments necessary to eliminate the cheaters, and you're in business.

As regards replacement of the shanks, I would consult with a supplier such as Brooks, Ltd., or Pianotek Supply Company, or Renner, USA, to find a shank-and-flange combination that would replicate the dimensions A-B and C-B from the original parts (after bolstering) as closely as possible.

PalmPilot™ & Piano Technicians

Q: I am considering the purchase of a PalmPilot™ to replace my paper schedule book. I misplaced my paper book last Friday and went through a day and a half of worry until I found it again. (No, I didn't have any backup schedule) I found it before my Monday appointments, but the experience started me thinking. If I scheduled on the computer and then used the PalmPilot™ to take in the car, I would always have a backup even if I lost the PalmPilot™; sure would appreciate pro/con from any users or former users.

— Dick Day
Marshall, Iowa

A: Jeannie Grassi, RPT: I have been using my PalmPilot™ Pro for a year now, and it may be the wisest purchase I've ever made. As for a tool for the traveling technician, there isn't anything more suitable. I use my PalmPilot™ for just about anything and everything I would use a pencil and paper for and, yes, you can purchase the cutest little modem to carry along and never stop reading "pianotech."

It has my daily, weekly and yearly schedule with room for notes on clients and easy ability to repeat the appointment at any future date. For easy reference, I can refer to work I did on Mrs. Jones's piano last February with all of the notes I wrote on that day. In addition (through add-on software from Pendragon Forms) I have a database that loads into Access on my main computer for storing all of my data.

I have every phone number, address, email, and other information for everyone I know and some important num-

Continued on Next Page

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bers of people I don't even know. – and fancy lists, memo pad, phone call notes, to-do lists, expenses, etc.

The best thing is when I get home at the end of the day, I set it in its little holder, push one button, and in a few minutes everything is loaded onto my main computer. No need to copy anything twice.

At this stage, I don't know how I would get along without it – it's kind of scary. I hope this helps. If you want more information, there are many links, but you could start with http://www.PalmPilot.3com.com/catalog/index.html.

A: Mike McCoy: Dick, yes, I have been using one for a year now and so far it is the only thing keeping me organized. You are correct in your statement that you are "protected" by backing up your PalmPilot™ to your PC, just be aware the PalmPilot™ and its IBM version "Workpad" only work on Windows 95. Should your batteries die (and I have not had that problem at all), you just replace them and take it home to it's cradle and punch the sync button and all your data is restored. The memopad, to-do lists and reminder functions all work very well and it doesn't take long at all to master the handwriting recognition. There are hundreds of websites devoted to these things with additional software programs you can download and install, most as a free trial. Make sure you get the model with backlighting so you can play with it in a movie theater! If you're a gadget person at all you won't be disappointed.

A: Mark Story: Yes, I bought one last year and I don't know how I did without it. My problem (probably not uncommon) was that I scheduled appointments from three places - my home office, here at school and mobile with a paper scheduler. The problem was that they were seldom up-to-date with each other. The PalmPilot™ solved this. I now have the desktop programs here and at my home office. I bought an extra interface cradle so now I can keep all three locations synchronized.
The PalmPilot™ was the first PDA that I have found that was:
1. powerful enough to be practical,
2. small enough to actually carry in my shirt pocket, and
3. be extensible though programming. The latter is quite interesting - you can find hundreds of additional programs available from third party programmers.

Some are free, some shareware and some are full tilt commercial. I use, in addition to the packaged applications, a basic database program called JFile. I think it was $20 shareware. I keep relevant data for all of my client's pianos in JFile. The data can be imported without too much trouble to Access or most any other database application that can import comma-delimited text files.

If you are inclined to do your own programming, you can get the GNC (C language) package for free, a basic interpreter, a high level graphical language called CASL ($70, I think) or go with the commercial package from Code Warrior. I haven't found the need to get to the trouble yet, though I would like an application that I could use to calculate estimates in the field. There is a spreadsheet application that could be used for this that runs about $50.

The latest model is the Palm III, which looks a little smaller, has a nice built-in cover for the screen, has a new version of the operating system and can be synchronized with another Palm III via infrared link.

A: Jim Coleman: Wow, I'm impressed! Now I won't have to carry the Mac to the job anymore. What roughly would be the cost of all the stuff you have to have on the PalmPilot™ to do what you do?

A: Jeannie Grassi, RPT: It is impressive, I agree. The PalmPilot™ Professional is selling for under $300 these days and the new Palm III is around $400 in most places. The programs are fairly inexpensive as computer software goes, and most are still so experimental that they are free! (Experimental, but nonetheless functional and useful.) I've gotten many cool things as shareware for almost free. I think the most I paid for a program was around $79 and that was for a database compatible with MS Access.

Oddly enough, the grass always seems greener – I am considering buying my first laptop at the same time that you are mentioning the possibility of swapping your Mac for something that appears more convenient. I think they all have their place and a good deal depends on your style of operating. Which, in the end, can be said about most aspects of our work.

A: Jim Harvey: Jim C., speaking of Macs, I understand there are many Palm/Mac owners. With a few program exceptions, the PalmPilot™ can be used with either platform. To answer your question, the Model I'm using is the Pro (1 Meg). Current street prices recently reduced to $299. I don't currently have a modem, or any of the other, neat, what'cha-wanna-do kind of hardware!

BTW, no PDA is a substitute for other platforms, including notebooks. For instance, I wouldn't consider one for word-processing.

I was aware of the PalmPilot™ since its introduction. I didn't pursue it, instead spent a lot of money on other options, including:

- various paper-based "systems" (Day-Timer™, Day-Runner™, others);
- computer-to-paper methods (customer lists, schedule, reminders);
- other PDA's (two Casios™, a Sharp Zaurus™, and a Texas Instruments™ something or other). What's really interesting is that all these devices were able to "talk to" big-'puter, either via serial or infrared connections.

I could have purchased several PalmPilot™s for less than all my experimenting! The Zaurus™ alone cost as much as the PalmPilot™. Some of us are slow learners in spite of trying to do the right thing.

I became aware that many corporate desk jockeys and computer "nerds" were using PalmPilot™s. At this time, I didn't personally know anyone who owned one, and had never seen a PalmPilot™ in person. I then read where, of the couple million user/owners, a significant number of medical professionals were using them for a variety of purposes. Their uses included patient records, i.e., while making hospital rounds, and cross-referenced databases of prescription drugs. This caused me to investigate fur-

ther, and to my ultimate purchase of a PalmPilot™ — still more or less on speculation. It didn't take long to realize that the PalmPilot™ was going to be a "keeper."

For me, the PalmPilot™ prevents duplication of effort, thereby increasing efficiency. Here's how, along with a primitive analogy to my former method.

I ported my client data from my office computer to the PalmPilot™. No re-inputting of data required. This includes names, addresses, and phone numbers. In this regard, it's no better than any other PDA, a Day-Timer™, or for that matter, index cards. I also ported over other pertinent client data, such as directions to the home, and the ubiquitous dog's name. So far, other methods will accomplish this. I also have information on vendors, manufacturers, friends, family, fellow chapter members, and so on, and categorize the entries so that only a particular group is listed if I so choose.

Now add piano names, serial numbers, manufacturing dates, and other instrument-related data. At this point, lesser electronic devices (like the $30 K-Mart offerings) start to run out of ammunition, but the Day-Timer™ and index cards are still viable options.

Now add a perpetual calendar, and a complete service history, including temperature, relative humidity, service charges, the amount of pitch change for the piano on that call, and any other notes related to an appointment. Then imagine having this information on demand for each client and piano for last year, or the last two or more years. We just lost the index card method, due to the need for a separate calendar. The Day-Timer™ system starts to lose out for archival information, since most folks don't carry their old fillers around with them — never mind trying to locate the information by flipping pages.

I usually update pertinent information "on the fly" — during the service call. Otherwise, especially on extended road trips, I update the PalmPilot™ from invoices at the end of the day (in the motel room). When I return home, typically four to 10 days later, I don't spend hours updating the main computer. I place the PalmPilot™ into its cradle, press one button, and the information is synchronized with the office computer. If a phone number or address (or the dog's name) has changed, it's all modified in the PalmPilot™ while the information is fresh, and automatically reflected later in bigputer's database.

The PDA eliminates duplication of effort, saving time and increasing accuracy and efficiency.

Highlights:

- one-button updates of client data on 'bigputer' *the* main reason;
- a learning curve suited for my increasing age and decreasing brain cells;
- a repository for many things that no longer take up space in those brain cells;
- replaced need to print new hardcopy for every client following every appointment;
- replaced a separate appointment book;
- replaced a separate note pad and To-Do list;
- read/respond to E-mail, play Solitaire, or read a Sherlock Holmes mystery during coffee breaks;
- saves a lot of paper, ink and related costs;
- replaced a calculator for estimates, percentages, other;
- [can] replace scientific calculators for higher-order ciphering;
- [can] replace tuning fork for pitch reference (stops the lights dead on SAT - but sawtooth waveform on a piezzo driver leaves a lot to be desired);
- alarm(s) alert me if I'm about to be late for appointments;
- incredible battery life;
- large 3rd party accessory and software offerings;
- a diverse, active user base, equal in numbers only by the annual income of a Micro$oft employee;
- supported by a responsive, understanding company (according to reports).

I now carry my tool case, one invoice, and the PalmPilot™ into homes. The paper jungle is essentially down to invoices. Since clients still seem to want these, I'm currently exploring the possibility of printing invoices on site, using the PDA to drive a printer, and the onboard data to fill out the form. I'll probably leave the printer in the car, however!

Untangling Auto Expenses

My name is Bill Mendus, and I am a Certified Public Accountant who has been in the practice of public accounting for 22 years. For the last few years I have been the outside accountant for the Piano Technicians Guild, and that is how it came to be that I was invited to write this column.

Bill Mendus, CPA

My column is about income taxes as they apply to Piano Technicians. Today's column is the first of two columns about automobile and truck expense, which I will henceforth simply call "auto" expense. This column will address the question: When can you deduct automobile and truck expenses? The second column will address the questions: What can you deduct? And what kind of records do you need to keep?

I am also planning a column on home office expense. These two topics seemed particularly relevant as tax season approaches. But the number of potential topics is practically unlimited. Since I want to make the column relevant to you, your feedback is particularly important. Please send me your questions, comments and suggestions about future topics. For example, it is just about impossible to cover every angle of a topic in a column of this length, so I would be happy to devote another column to questions about this one.

The threshold qualification for deducting auto expense is that you have a permanent place of business, a "tax home," either in your home or outside of your home. If you don't have a permanent place of business, you are in tax parlance an "itinerant," and you may simply be out of luck so far as deducting auto expense is concerned, whether for local or out-of-town travel. There is a lot more to say about permanent versus temporary places of business and the concept of a "tax home," but today we will assume that you have a permanent place of business.

The next question is whether your place of business is in your home or outside of your home. If your place of business is outside your home, then travel between your home and your place of business is commuting and is non-deductible. Under my interpretation of present tax rules, given that you have a permanent place of business, every other trip you make for business purposes is a deductible business trip.

For example, if you drive to a client's location, either from your home or from your outside place of business, that is a deductible trip. If your place of business is outside your home, it doesn't matter whether you go to your place of business first or go directly to your client's location. The trip is deductible either way. If your place of business is in your home, the trip is still deductible. If you go from one client's location to another, that is a deductible trip. If you drive directly home from a client's location, that is a deductible trip, again whether or not your place of business is in your home. This same analysis applies to other kinds of business trips, such as trips to buy supplies or tools, trips to attend seminars and business trips out of town.

To repeat, under my interpretation of the present state of the tax rules, only the trip from your home to your outside place of business is non-deductible as commuting. Every other business trip is a deductible trip.

Now we get to the fun part. Why do I qualify this by saying that it is my interpretation? The answer is that my interpretation is controversial because the IRS insists that your place of business is the place where you make your money, not where you keep your records or store your tools. For you, this IRS interpretation means that they may insist that your place of business is the location where you tune or repair pianos, which for many of you will be different from what we have been talking about as your "place of business." If your place of business is outside your home and if you do a substantial amount of tuning or repairing at that location, then you will probably meet the IRS criteria. But if your place of business is merely where you keep records and store tools, whether inside or outside your home, you will not meet the IRS criteria.

Since it is well established that travel from one place of business to another is deductible, the practical effect applying the IRS interpretation would be to deny you a deduction for your first trip in the morning and your last trip at night. Your trips in the middle of the day would be from one business location to another.

I disagree with the IRS interpretation based on a string of court rulings in South Dakota in which tree cutters were allowed to deduct their trips between their places of business at their homes and the locations where they cut trees. This string of rulings specifically rebuffed the IRS on this issue.

Keep in mind that this issue only involves that first and last trip. It's up to you and your tax advisor to decide this issue.

P.S. In July, after an almost 40-year hiatus, I began piano lessons. Just for the record, that was before I knew about this column.

Bill Mendus, CPA, practices accountancy in Kansas City, Mo. Please direct tax questions for Mr. Mendus to the PTG Home Office. Individual replies will not be possible, but question may be used in future columns, which will appear four times each year.

Tuning To A Pipe Organ

By Jim Ellis, RPT
Knoxville, TN Chapter

Abstract

Experimental results show that a pipe organ will go sharp by between 1.5 and 2.0 cents per degree Fahrenheit as the temperature rises. In this article, the experimental results agree with the calculated prediction to within seven percent.

Introduction

Confusion about the effect of temperature on the pitch of a pipe organ seems to persist among some piano technicians. There are those who believe the organ's pitch goes flat as it warms up, but there are others who believe it goes sharp. On those occasions when it may be necessary to set the pitch of a piano to that of a pipe organ, the piano technician should take the ambient temperature into account, anticipate what it will be when the organ and piano are actually played together, and understand what the effect of a change in temperature will be. My concern is that some piano technician, believing certain erroneous information to be correct, will find his/her tuning in trouble when the time comes for the piano and organ to be played together. My purpose in writing this article is to provide correct information so that piano technicians can avoid that situation.

The Rationale

The rationale for erroneously concluding that a pipe organ goes flat when it warms up is that the pipes expand, get longer, and make the pitch go lower. This would be true if expansion of pipes were the only thing that happens, but it is not. When dealing with a pipe organ (as opposed to an electronic organ), the temperature, therefore the density, of the air inside the pipes is the dominating factor. Except for the reed pipes, the pitch of an organ pipe is proportional to the velocity of sound in the air column inside it. As the air gets warmer, it expands and becomes less dense. Sound travels faster in warm rarefied air than it does in cold dense air, therefore the pitch rises as the temperature rises. This pitch of the reed pipes is determined by the reeds themselves as well as the resonant frequency of the air columns inside the pipes, therefore they behave somewhat differently from the other pipes in the organ.

Some Specifics

The velocity of sound in a gas (air, in this case) is proportional to the square root of the absolute temperature. We usually refer to absolute temperature as Kelvin (K). Absolute zero (K) would be equivalent to -460° F. Therefore, an ambient temperature of 70° F would be 530° F above absolute zero. If we calculate the change in pitch of an organ pipe as a function of change in temperature, we must also include the change in pipe length due to its expansion (or contraction). It turns out that the change in air density has a much greater effect on pitch than does the change in pipe length; therefore, the pitch goes sharp, not flat, as the temperature rises.

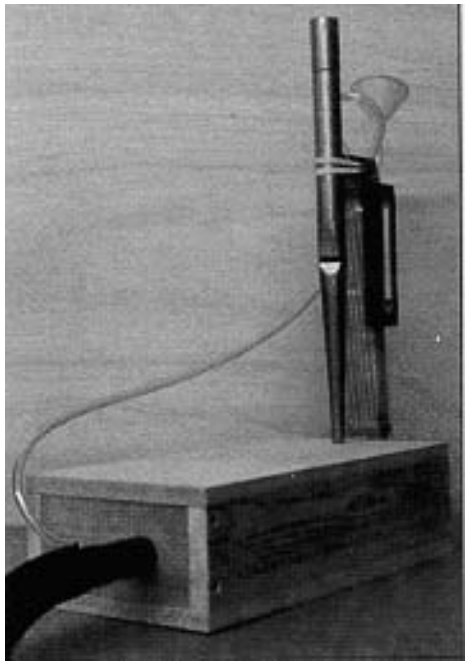

Photo 1

Experimental Set-Up

I feel strongly about presenting facts (when facts are known) as opposed to mere opinions, which resolve nothing and only lead to arguments. For that reason, I decided

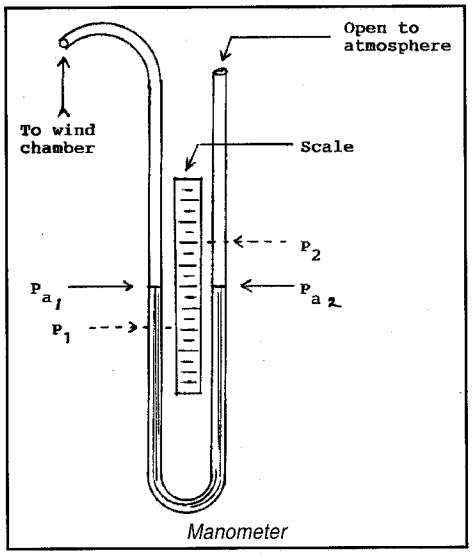

Figure 1

to approach the pipe-organ-pitch question the same way I did the bridle-strap-repetition question.[1] I would just take the time to do the experiment to prove the point, even though I already knew the answer.

Photo 1 is a picture of the experimental set-up. I made the miniature wind chest (the box in the picture) from shop scraps. A common indoor thermometer is shown mounted on the pipe support post. The organ pipe shown is an open diapason C (octave above middle C) designed to speak at a wind pressure of about four inches of water.[2] Figure 1 is a sketch of the kind of manometer that was mounted on the back of the pipe support post for measuring the pressure inside the box. The manometer tube is partially filled with water. One end goes to the wind chest, and the other is open to the atmosphere. When there is no wind pressure, i.e., when the pressure inside the box is the same as the atmospheric pressure outside the box, the water level at points P_{a1} and P_{a2} will

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Tuning To A Pipe Organ

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be the same. When wind pressure is in the box - when it is above atmospheric pressure - the water level on one side will drop to P_1, and it will rise to P_2 on the other side. The difference between the two will be the wind pressure. In this case the liquid is water, and the scale is in inches, so we read the pressure as inches of water.

The wind pressure of a pipe organ must be well regulated. This is normally done with large bellows regulators that feed the air to the wind chests. I had no such thing, and I did not intend to build one any more than I intended to mess up the temperature control and tie up a pipe organ at a local church just to do this experiment. And besides, I wanted to demonstrate the effect of changing wind pressure on pitch. The logical solution was to make the exit port (blowing end) of my shop vacuum cleaner the wind supply for this experiment. Obviously, I could not run the shop vacuum cleaner at full line voltage because that would blow all the water out of the manometer tube and turn the organ pipe into a calliope whistle if it didn't blow it completely off the box. The solution to that problem was to connect a Variac[3] between the electrical outlet and the cleaner motor. By using this device, I could manually adjust the voltage, the motor speed, and the wind pressure from nothing up to whatever I needed.[4] There was no valve in the box under the pipe, so it spoke whenever there was wind. The experiment was done during mid-June; therefore, to lower the ambient temperature, I ran the air conditioner, and to raise it, I opened the windows. To minimize the heating of the supply air by the cleaner motor, I ran it only long enough to make each measurement, and then I waited at least 30 minutes – sometimes longer – before taking the next reading. The set-up was crude by pipe organ standards, but it worked, and it got the job done.

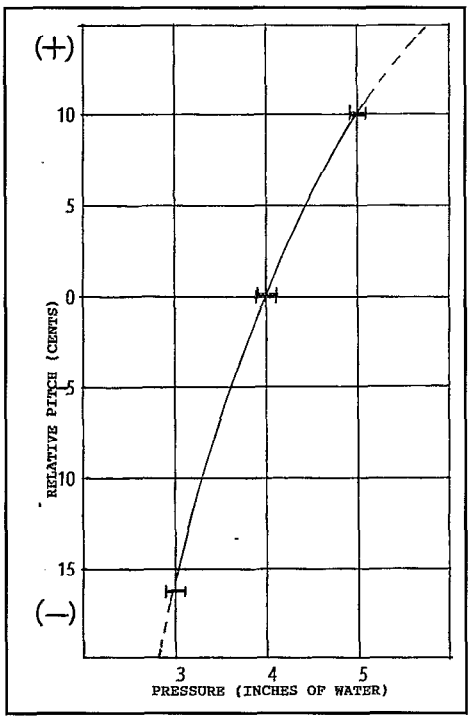


Figure 2

Experimental Results

Figure 2 is a graph showing the measured effect of wind pressure on relative pitch. Using my Sanderson Accu-Tuner to measure pitch, I tuned the pipe to exact pitch at a wind pressure of four inches of water and an ambient temperature of 75° F. The error bars in the graph (instead of points) indicate the limits of accuracy in setting the pressure at the 3,4, and 5 inch differential between the two columns of water in the tube.

Figure 3 is a graph showing the measured pitch change as a function of temperature at a wind pressure of four inches of water. The error bars in this graph indicate the limits of accuracy (plus or minus 0.5°F) in reading the common indoor thermometer. Absolute accuracy is not crucial here because it is change in temperature that we are interested in. According to the diagonal line, which represents the average, the relative pitch would be -7.7 cents at 70.5° F, and +3.0 cents at 77° F for a change of 10.7 cents total over a 6.5° F temperature span, or +1.65 cents per degree (F) temperature rise.

Calculated Results

To calculate how much the velocity of sound, and therefore the pitch, will change between 70.5° F and 77° F, we compare the square roots of the two temperatures based upon absolute zero. From absolute zero (0.0 Kelvin), or -460° F, 70.5° F would be 530.5°, and 77° F would be 537°. Comparing the square roots, we have

$\sqrt{530.5} = 23.03258561$,

and $\sqrt{537} = 23.17326045$

The difference in the square root is:

23.17326045 - 23.03258561 = 0.14067484

Calculating the proportional change,

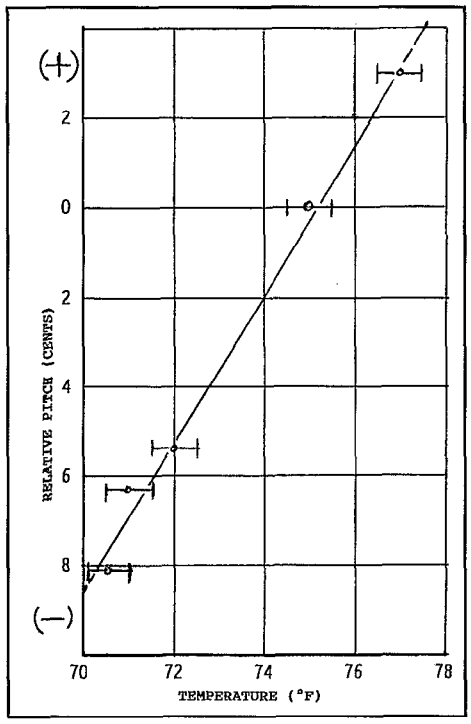


Figure 3

we have:

$$\frac{0.14067484}{23.03258561} = 0.006107644$$

Rounding this number off, we show a total change of 6108 parts per million over the 6.5 degree span. Dividing by 6.5 (the total temperature change) we have 6108 ÷ 6.5 = 939.6923077, and when we round that off to three significant figures, we end up showing a change in pitch of 940 parts per million per degree F at room temperature.

We still have not accounted for pipe expansion, or converted our results to cents. The coefficient of linear expansion of the soft metals is about 50 parts per million per degree F at room temperature. This has the opposite effect on pitch as does the change in air temperature, so we must subtract it out. We then have:

940 - 50 = 890 parts per million per degree F. Now we convert this to cents. One cent, based upon the 1200th root of 2, is a ratio of about 1.00057779 to one, or, rounded off, represents a pitch change of 578 parts per million. Therefore, the change in pitch is 890 ÷ 578 = 1.54 cents per degree F when rounded off to three significant figures. The error between the experiment and the calculated value is:

1.65 - 1.54 = 0.11, and

0.11 ÷ 1.54 = 0.0714, or seven percent when rounded off. Under laboratory conditions, this much error would be unacceptable. However, under the conditions described, I think it's pretty

good considering the difficulty in reading the thermometer to better than 0.5° F, adjusting the pressure to the 4-inch differential, and keeping it there long enough to quickly measure the pitch before the motor heated up the supply air.

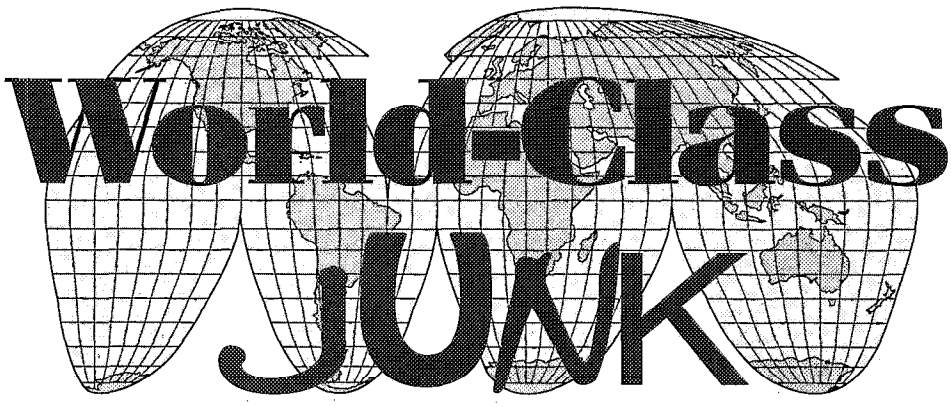
Conclusion

I thoroughly enjoy the sound of good music played on a big pipe organ by an accomplished organist. However, in my opinion, making a general practice of setting the pitch of a piano to that of a pipe organ in a church is not the way to go. When the sanctuary and choir loft are full of people and all the lights are on, the temperature is not going to be the same as it was on a week day in an empty sanctuary when the piano was tuned. In addition, the effect of rising temperature at the piano will be opposite to that at the pipe organ. In most cases, I find that I am better off to keep the piano at the standard A=440 Hz pitch.

When it is necessary to tune a piano to a pipe organ, as sometimes it is, it is important to remember that the organ will go sharp by a little more than 1.5 cents per degree (F) as the temperature rises. The only time a pipe organ will go flat when it warms up is when its blower that supplies its wind is located where it will suck in cold air from the outside. That is a situation that competent organ builders try to avoid. It will not only change the pitch of the organ, but it will make it sound out of tune with itself.

References

1. Jim Ellis, "Bridle Strap Function," *Piano Technicians Journal*, December 1997, page 17.
2. Compliments of the former Moller Pipe Organ Company. This was a souvenir of my visit to the Moller factory in the late 1960s when I was following up on bids for installing a pipe organ in the church where I was a member at that time. I watched the man who made this pipe. His artistry and craftsmanship were something to see! He used a funny-shaped soldering iron heated over a Bunsen burner, a stick of solder, and candle tallow for flux. One stroke of his hand would produce a seam more perfect than I could make with the latest high-tech, laser-guided, computer-controlled soldering apparatus one could imagine!
3. Variac is a trademark of General Radio Corporation, of Cambridge, MA, for a variable-voltage transformer.
4. Most vacuum cleaners use series-wound motors that allow speed to be controlled by line voltage. This technique will not work for induction motors.



By Susan Kline, RPT
Feature Writer

The Hunting of the Noise

"For the Snark's a peculiar creature, that won't
Be caught in a commonplace way.
Do all that you know, and try all that you don't:
Not a chance must be wasted today!"
(All quoted verses are from "The Hunting of the Snark" by Lewis Carroll.)

Never give a noise an even break. Chatters, clanks, jingles, groans, buzzes, clicks, whistles, whiskery scrabblings, squeaks, thuds — obnoxious all. It's worth the time to ferret them out.

The annoyance of being confronted by this aural garbage should not be suppressed. It is much more profitably employed as a spur to the chase. Inevitably a noise or two now and then will defeat me, but I hate that, and will keep interrupting a tuning to try again.

The Kimball Story

(Ah, the glow of distant memories...)

It was a Kimball grand, five or six feet long. As soon as I started tuning (the first person in about a dozen years to do so) there arose a dreadful clanking. It sounded like it originated down near the tail somewhere. I looked everywhere I could, with a flashlight and dental mirror (which are excellent weaponry for a noise hunt), and I reached through the plate holes. I looked high and low several times during the tuning, even checking that little niche below the soundboard near the rear leg. I began to see that I might lose this one, but it sounded so bad! I even talked to the fairly stolid owner about having some movers tilt the piano so whatever it was would fall out, but he felt no enthusiasm for the idea.

Finally, as I was finishing the tuning, he unwound and straightened a coat hanger and handed it to me. "Stop worrying about scratching the soundboard," he said. So I did stop worrying. I bent the coat hanger so that it would go under the plate behind the bass bridge, and swept it around like a maniac. After at least five minutes of this I was rewarded by a clink and a scraping sound and soon retrieved a house key. He did not recognize it. He did tell me that the piano had made that clank ever since it was brand new, about 25 years before.

"Do All That You Know"

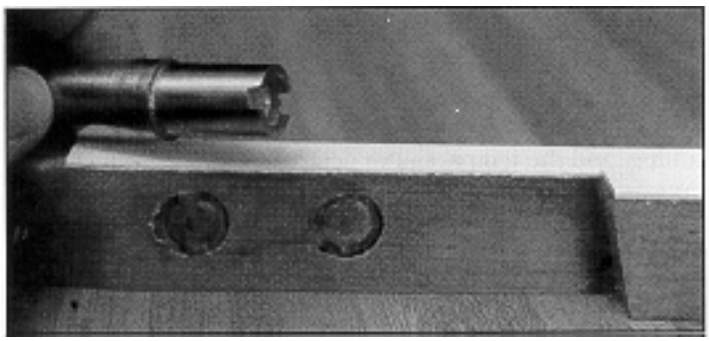
Over time, these searches give one a repertory of noises, each with a label. Sometimes noises are referred, and appear to come from somewhere other than the real source. By recognizing what type of sound we are hearing, and knowing the likely causes, we can track noises down even when they try to fool us.

I shall attempt here to classify my noise-repertory. Most of the rogues fit into this gallery:

1. Loose action screws. Tightening them all is a good first step in quieting a clattery old garage-wreck. Don't forget the often-ignored damper flange screws and action bracket screws.
2. Places where cushioning is likely to fail: Grommets, especially rubber grommets, such as spinet key grommets and pedal dowel grommets. For that matter, rubber in general is sure to fail given time, and sometimes not all that much time. Other types of cushioning include leather on trapwork, action cloth such as wippen or sticker cloth, and damper lever cloth. If the damper levers are lined with felt instead of cloth it can wear through (for instance, from a spot of glue on the spoon) and get very noisy. Missing butt felt produces a particularly unique clack as the jack hits the wood behind. Front rail bushings that have been badly eaten by moths or carpet beetles can allow a bad knocking noise if the key is hit hard.
3. Worn or missing bushings, both key and flange. Also bushings for the pedal rod hangers, and in some old uprights the lining of a hole through the keybed or a metal bracket for a pedal dowel.
4. Spots of glue on cushions like butt felt or wippen cloth. Anything hard or crusty on damper felt.
5. Places where glue has failed. Loose hammer heads, loose catcher shanks, slapping key tails. I find that I have good luck with the loose upright hammer heads by putting some white glue on my pinkie, reaching around to the front of the shank, and rubbing the glue into the seam. For the slapping key tails, I take the key out, lift the end slightly, and drip a little CA glue onto the wood of the key, letting it drip down from the end a bit. It's important to keep the glue from reaching the top of the ivory, especially if you have no acetone with you to remove it. With plastic keytops this is especially critical, since the CA glue eats into the plastic, and so

does the acetone usually used to remove it. If you do manage to let a drop of CA glue get on top of a plastic key, gently blot it up without any rubbing at all. You will still be able to see where it was.

6. Soundboard noises. Some soundboards are too far gone to help, but for stopgap measures I try this process: I have someone play a note that brings out buzzes and false tones, while I move around seeking the source. I go behind the piano and press different places on the soundboard, and see which places stop the noises. If a rib seam is just slightly open, I drip CA glue along the top of the rib, letting it follow the seam. If pressing a key button gets rid of the noise, I unscrew the button and remove it, put white glue and possibly a scrap of leather in the hole, and put it back on, tightening well. If neither of these help, yet pressing a rib gets rid of the noise, I will sometimes jam a wedge of scrap hammer felt between the rib and a backpost.
7. Hardware: bridle wires bent too far to the side, hinges with loose screws or loose hinge pins, and of course pedal trapwork!
8. Poor clearance between parts. Rubbing keys (I sand the sides), sharps that are too close to the name board (if I can't move back the rail I shorten the sharps with a jeweler's saw), overly wide monochord damper felts (I trim), springs out of slots (I love the Hart Spring Tool!), and any warped or mis-aligned parts that rub. One might add, replacement keytops where the notch hasn't been filed back far enough. I keep a file with a good handle that will just fit in the space left when a sharp is removed. I've ground the edges smooth. By holding it vertically, it is possible to file the notches of two notes at once, and still keep them even and square.
9. Loose parts: loose hammers from cracked butt plates (another unique sound), wandering center pins. Jack center pins can also make a screeching noise as they rub the wood of a neighboring wippen. Worn hammer centers, and loose leads in underlevers or keys. I swage loose leads with a punch that should be aligned so the lead spreads against the endgrain of the key, instead of trying to split it. After it seems firm, I add a little CA glue to the seam.
10. Failing parts: Artificial leather that is turning to stone, old bridle tapes with hardened tabs and enlarged holes in the tabs. If the bridle tapes are noisy, but aren't going to be replaced yet, they can be encouraged to shut up by squeezing a drop of white glue right on the hole. This little jingling, juddering noise is one of the most common we come across in old pianos, but also one of the easiest to fix. Also, of course, broken parts can make noises.
11. Loose case parts, such as loose or cracked bottom boards. (I dealt with these in an earlier article.) Shifting case parts that squeak as the pedal rail flexes. (I mentioned these, too. Smear VJ lube where you see a fine powdery residue at contact points.) Another, frustrating source of noise when using the right pedal is a small motion at the short vertical seam between the pedal rail and a toe block. It is one of the few places where I will spray a lubricant (not silicone!) in small quantity, directly on the seam. Have something between the piano and the carpet to catch any drips, and wipe off the excess immediately. If you get the spray in the wrong place, or ruin the finish, you didn't learn the procedure here, please!
12. Sympathetic noises from somewhere outside the piano: picture frames, bric-a-brac, mirrors, heating vents, what-have-you. Ceiling fans can make some very strange sounds, as their vibrations interact with piano tones and cause interference patterns.
13. Foreign Objects! Here the hunt commences in earnest (and is the most fun) because they can be almost anything, anywhere. I love using the long tweezers to extract some bit of whatnot. I hold it up and say in a very serious, medical tone, "foreign object."



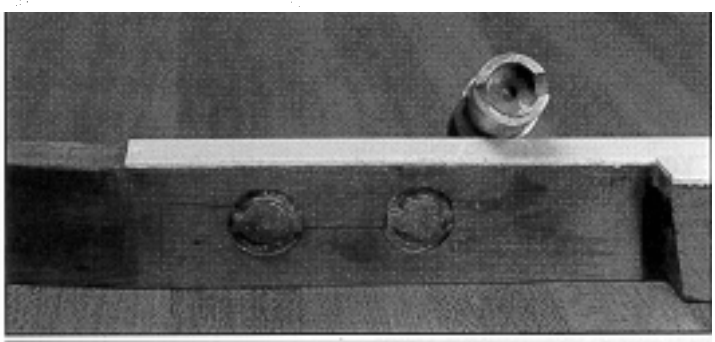


Photo 1 (TOP) — Punch designed be Edward Sambell, RPT, for swaging key leads, shown with leads swaged properly, notches vertical. Photo 2 (ABOVE) — Leads improperly swaged, with notches horizontal. Note splits in key.

Three Experiences

- A teacher called me back after a tuning, complaining of a loud knocking. She said she had looked inside the piano, and found nothing. As I checked it myself, she went into the kitchen to deal with a broken refrigerator full of perishable food. (She was not having a good day.) I didn't think the problem would be too hard, because there was nothing at all subtle about the loud noises. Three minutes later I told her that she had a Mickey Mouse problem, and she got mad. Then I showed her the 10-inch Mickey Mouse clock behind the piano, leaning against the soundboard. (I get rid of a lot of noises in school pianos by removing assorted clutter from the little cavities in the rear of an upright, between the back posts. Gloves needed. For some reason, broken glass seems common back there.) Marbles can be particularly noisy.
- Another teacher with a blond spinet told me, "it has a problem in the bass." She was afraid the piano might be impossible to repair, and she would need to replace it. Again, three minutes later I told her that she had a treble problem. She said that, no, it was a bass problem. Then I removed the chromed wire 12" treble clef wall

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World-Class Junk

Continued from Previous Page

decoration from between the stickers and the wippens, and handed it to her.

- A very good teacher, my friend, was afraid that her Kawai grand had a soundboard crack. All it had was a red pencil just under the edge of the plate near the bass bridge. She was a heavy user of paper clips, as so many teachers are. Once when she was gone she left a note that she had overturned a whole box of them into the piano. It was like an Easter Egg hunt. I kept finding more. Before I was done I was holding the action vertically and shaking it. I left a small sealed jarful of them on the piano. Paper clips, rubber bands, pencils and pens, thumb tacks ... I hand them to the owner, and say, "Kline's Office Supply at your service."

I always return money found in a piano, even if it's a 1968 penny. Kids love it when money is found in a piano, especially old coins. Coins between keys cause another of those unique sounds, as if the piano is trying to tell you what is wrong.

Piano Vocalizations

"I said it in Hebrew – I said it in Dutch –
I said it in German and Greek:
But I wholly forgot (and it vexes me much)
That English is what you speak!"

When diagnosing noises, we are not awash on a sea of troubles without any map or compass. The piano is usually saying what's wrong. We merely have to learn the language. It's like a translation: you play a note, hear a particular clack (on release), and know immediately that the piano has said it needs new butt felt on C#5. In time, one's vocabulary of sounds can get quite extensive, but even before that one can map out broad categories: is it wood? metal? hitting, scraping, or buzzing? from pedaling? from playing? from the case? from the room? from the soundboard? on hammer impact? on let-off? or on release? Any of these categories will eliminate a whole raft of things that aren't causing the noise.

(Do All That You Know) ... And Try All That You Don't

As soon as you can locate where a sound is coming from, you are 90 percent of the way to a cure. So, divide and conquer. Eliminate systems and see if the noise disappears, too. For example, if a note makes a noise, hold down the key and work the note by raising the wippen or sticker. If the noise is still there, try holding the damper off the string and playing the note to see if the sound disappears. Once you've narrowed the location, if it seems that both parts are quiet if moved alone, but when played together they make a noise, then the problem is where the two parts meet. For instance, if the key seems quiet and the note played from the wippen also seems quiet, strong suspicion falls on the wippen or sticker felt where it touches the capstan or dowel.

Similar efforts: See if a pedal noise disappears after you take off the kneeboard. Then try working the pedal from the dowel, and then (on an upright) by reaching in from the side and working the damper rod by hand (if you can). If the pedal levers on an upright seem noisy, try pulling one to the side and see if they are more quiet. For grand pedals, if nothing within reach seems noisy, and the pedal box doesn't seem to be the source, remove the action and see if you can make the noise by moving only the tray. Likewise on a grand, try bracing the lyre by hand, working the pedal with the other hand, and see if the noise disappears. For both pedals and keys, try pulling the part to the side and working it, to see if the noise gets worse.

Sometimes you can remove possibilities by putting something between parts. For instance, if you suspect noisy knuckles, lay a handkerchief between the rep levers and the knuckles. I remember the "Eureka!" sensation when I did this once, after long frustration.

Example and Riddle

"They roused him by jam and judicious advice –
They set him conundrums to guess."

Two weeks ago a silly little noise challenged me to find it. One hammer on a modest upright made a little click and I could sense that the hammer was hitting something just before it reached the string. It was easy to eliminate the key, and the wippen, and the damper. That left the hammer, but I could see no foreign object to interfere with it. I removed it, and, as so often happens, it looked completely normal and wholesome. The flange didn't rub on anything, and the pinning was good. I repinned it just in case, put it back in, and the noise was unchanged. Finally I took the flashlight and my reading glasses, looked harder, and found it. Someone had strengthened the damper springs by putting a big kink in them so they stuck far out. The right forward edge of the hammer butt just barely touched the kink in the spring just before the hammer reached the string.

Now, it's your turn. I fixed the following problem, without removing the action. Can you tell me what I did? I'll put the answer in the next article; however, since the *Journal* has a two-month lead time, I won't be able to see your replies first. If I get some very ingenious answers, I may mention them later on.

The piano was a normal enough spinet. The owner complained of a rattling sound when playing. I played every single note, hard, and they were all quiet. Confused, I started tuning, and the temperament octave was uneventful. However, as I started tuning octaves downwards, when I played around middle C along with the note an octave lower, I heard a dreadful rattling, like something hard was touching the bass strings. I investigated: for the notes between G3 and C4, when I played them with the note an octave lower I got a miserable noise. Only when playing the octave. (Well, one also did it with a major 7th.) No other interval caused noise. There were no foreign objects in the piano. The rattling had been going on since the piano was new, 20 years or so before.

Ideas, anyone?

"'You may seek it with thimbles – and seek it with care
You may hunt it with forks and hope;
You may threaten its life with a railway-share;
You may charm it with smiles and soap –'"

("That's exactly the method," the Bellman bold
In a hasty parenthesis cried,
"That's exactly the way I have always been told
That the capture of Snarks should be tried!")

I don't know of any noises that have been charmed by smiles, but for "soap" you may certainly substitute "VJ Lube." Others swear by thick Protek™ (MLP) or wind players' cork grease, but VJ Lube has worked so well for me and held up so well over time that I continue to use it. I call it "Tuner's Greasy Kid Stuff." It is available from McCall Enterprises, 6187 Bellmeadow Dr., Columbus, Ohio 43229, phone (614) 898-9497, for a very modest sum.

The other lubricant I wouldn't do without is Bill Spurlock's Micro-fine Teflon Powder. His address is Spurlock Specialty Tools, 3574 Cantelow Rd., Vacaville, CA 95688. Pianotek™ Supply Co. (800-347-3854) also carries Micro-fine Teflon Powder.

You might keep an eye peeled for the illustrated flashlight, made by Garrity. It will stand up by itself, or clip onto something, and the head pans to point right where you want. The beam focuses. I adore it, and don't know how I did without it.

Photo 2 — VJ lube, dental mirror, Garrity flashlight, micro-fine Teflon powder, reading glasses, and medical tweezers.

A few caveats, as usual: Anything greasy, waxy, or oily should of course be kept off of strings, especially bass strings, tuning pins, dampers, grand keybeds, and grand knuckles. I find that the micro-fine Teflon powder lasts better on knuckles if it is scrubbed into the suede with an old toothbrush or rubbed in with a piece of scrap hammer felt. For keybeds I rub the hardwood inserts where the glides slide with soft pencil lead, and use baby powder on the rest. I never use silicone for anything. It wanders, and will ruin finishes by mottling the wood beneath. I've heard using silicone likened to dropping a big box of bb's, which then go everywhere. We have plenty of other lubricants.

"But oh, beamish nephew, beware of the day,
If your Snark be a Boojum, for then
You will softly and suddenly vanish away,
And never be met with again!"

When hunting piano noises, the exact opposite is true. If you manage to fix a Boojum (a piano noise no one else could defeat) you will be met frequently with joy and loud praise, while those too helpless to diagnose and treat squeaks and rattles and buzzes will softly vanish away. PTJ

People at Providence

Darrell and Barbara Fandrich, Seattle, WA, and a friend during the Yamaha Reception Saturday night.

Western RVP Jim Coleman Jr. and Jeannie Grassi, Seattle, WA Chapter, relax during a Council meeting.

Yat-Lam Hong, Western Michigan Chapter talks with Ron Torrella, Ethics Committee chairman.

Ken Jankura, Central Pennsylvania Chapter, from left, and Jim Hess and Ron Engle, both of the South Central Pennsylvania Chapter, take a break in the Rhode Island Convention Center.

Past PTG President Ron Berry, left, and 1998-99 President David Durbin find a quiet spot for a discussion during a reception at the Rhode Island Convention Center.

Trigger Point Self-Massage for Piano Technicians — Part V

The Stomach and Chest Muscles

By Clair Davies, RPT
Bluegrass, KY Chapter

This month I want to discuss the muscles of the stomach and chest — the rectus abdominus, pectoralis major and minor, serratus anterior, psoas, iliacus, and the external and internal obliques. These muscles of the front and sides of the body are a neglected bunch, and they're incredibly important because they work so hard and contribute so much to support and protection. Tension concentrates in them, causing a multitude of ills. Referred pain is their strong suit, creating mysterious maladies that frequently elude the best of healthcare workers, whether they are physical therapists, physicians, chiropractors or massage therapists.

Trigger points in the pectoralis major and minor, for instance, cause pain in the muscles themselves, but also commonly refer down the arm. Along with the pain in the arm, a tight pectoralis minor, squeezing the neurovascular bundle (the nerves and blood vessels of the arm), can cause thoracic outlet syndrome, which is pain, numbness and tingling in the wrist, hand and fingers — altogether a perfect imitation of carpal tunnel syndrome. The main trigger point for the pectoralis minor is found in the small triangular depression just below the clavicle, halfway between the sternum and the point of the shoulder. Some dedicated massage of this site will soon remove the fear of the doctor's knife on your wrist.

The people I work on in my massage practice who spend their day at the computer keyboard (or the piano keyboard) always have tight scalenes and pectoralis minor muscles. People who tune pianos do, too. I think of this set of muscles as hidden assassins, very subversive, quiet little troublemakers. They usually don't hurt on site, but prefer to send their trouble other places. When all these symptoms occur on the left side, it may make you (and your doctor) think you're having a heart attack.

According to Travell and Simons, deactivation of a certain trigger point in the right pectoralis major, located between ribs 5 and 6 on a line from the nipple to the belly button, can sometimes end chronic heart arrhythmia. Also, chest pain that remains long after a heart attack is very likely due simply to trigger points that were activated in the pectorals during the attack. The Travell and Simons books are full of tidbits like that.

Comprehension of the patterns of referred pain is absolutely essential when dealing with any pain in the arms, hands, wrist and fingers. Along with my bad shoulder, I had in my hands and fingers all the classic symptoms of carpal tunnel syndrome, all of which went away fairly quickly with massage of the right places in the shoulder girdle. To execute massage on the pectorals, use the knuckles. (See Figure 1) Dig in deeply and slowly draw them across the whole area. Supported fingers may work even better to zero-in on tender spots. (See Figure 2)

The pectoral muscles become shortened and knotted in people who work hard with their hands and arms. Any posture or activity that habitually hunches the shoulders causes a rather permanent rounding that's hard to correct just by correcting the posture. For pain in the medial epicondyle (the inside of the elbow), look for trigger points in the pectoralis major. When your shoulder blades stick out in back ("winging" of the scapula), it's a sure sign of trigger points, shortening and excessive tight-

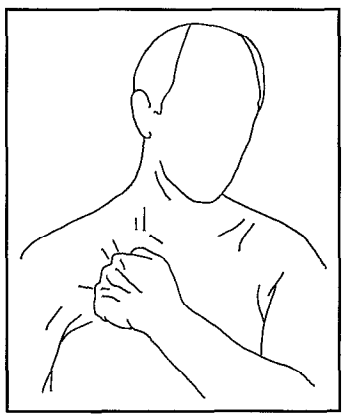

Figure 1 - Massaging pectorals with knuckles.

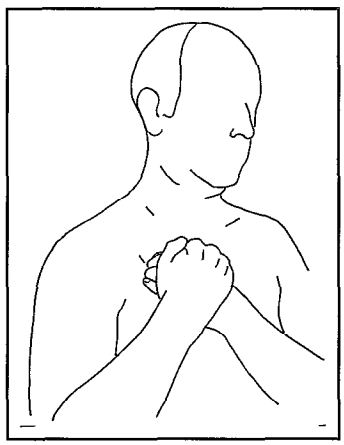

Figure 2 - Massaging pectorals with supported fingertips.

ness in the pectoralis minors. Pain in the front of the shoulder or difficulty in reaching back at shoulder level are other signs of pectoral trouble.

My right shoulder had always been considerably lower than the left one. What was really happening was that the shoulder was rolled so far forward from tight pectorals that my arm hung down in front rather than at my side, and at the same time caused the shoulder to hang lower. After getting rid of the trigger points in the pectorals on that side, my shoulders are nearly square and level.

Trigger points in the rectus abdominus, the big central slab of muscle, sometimes in well-developed individuals called a "six-pack," causes many a tummy ache, or pseudo tummy ache, I should say. We have here a demonstration of somato-visceral referral. Trouble in your intestines can make your stomach muscles hurt, and trigger points in your stomach muscles can give you the mistaken notion that your stomach aches or that you have gas. Chronic trigger points in the rectus abdominus mimic the pain of an ulcer. They can also evoke nausea, vomiting, anorexia, diarrhea, menstrual cramps, and sphincter and urinary bladder spasm.

You can clear up all these concerns, along with almost all your belly aches, with a simple maneuver, the belly squeeze. (See Figure 3) Working from the sides with the fingertips or the knuckles or the heels of the hands, push the rectus abdominus into a wad and hold it for a few seconds. A little kneading action helps. This effectively compresses any trigger points that are present and, to be sure, pain felt during this compression does indicate the presence of trigger points. Pain that doesn't go away quickly with massage may be referring into the muscles from the viscera, indicating a genuine internal problem.

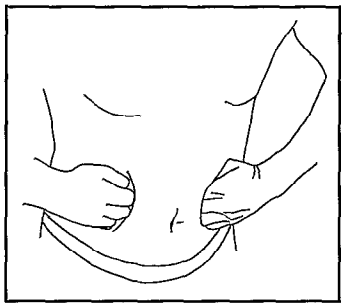

Figure 3 - Performing "belly squeeze" massage on rectus abdominus.

The psoas muscles (the "p" is silent) are another strange situation. Located behind the abdominals and in front of the vertebral column, this pair of sausage-like muscles are a prime source of low back pain. They are, in fact, true back muscles. It's rare to find a therapist of any sort who has the knowledge, skill or nerve to work these muscles, but there's a simple way to massage them yourself. As seen in Figure 4, lie on your back in bed with the legs up and the knees bent. Then lean the legs over to the side to raise the hip just a bit. Gravity then makes the intestines move down to the side out of the way, leaving a channel at the edge of the rectus abdominus, midway between the belly button and the hip, wide enough to give unobstructed access to the psoas.

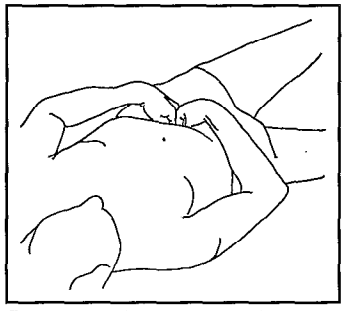

Figure 4 - Position for massaging psoas muscles.

Put the fingers of both hands back to back and insert them straight down into your abdomen. With your body in this position, going straight down will aim your fingers right at the spine. The psoas will be found blocking the way, and it does feel just like a kielbasa sausage in there. When there's a minimum of body fat, the psoas will seem to be right beneath the skin and may hurt a lot with even very little pressure. Stroke the psoas all along its length, generating a bit more pain than you think you can stand. Pain, of course, indicates the presence of trigger points that need to be erased. Massage of the psoas often makes the low back hurt while the massage in being done. It's a very convincing demonstration of the reality of referred pain and shows the very strong probability that your low back pain is indeed coming from your psoas.

Both sides, of course, will need to be done, and you will find that one side will be more tender to the touch than the other. The psoas attaches to the spine at about the level of the last ribs and continues down to join the iliacus, which lines the inside of the hip bone. Both then attach to the inside of the femur. The iliacus can also be worked with the fingers of both hands back to back. It won't be as tender as the psoas, but should not be neglected. Referred pain from psoas trigger points apparently contributes to the sense of menstrual cramping. Several of my female clients have told me that during psoas massage they felt pain being sent to their ovaries and uterus, thus clearly indicating a link. Weak abdominal muscles and sitting too much with the knees up evidently promote trouble in the psoas.

The trigger point for the serratus anterior is located under the arm, straight down from the armpit at the level of the nipple. Functioning as an auxiliary breathing muscle, the serratus anterior causes the familiar stitch in the side associated with running hard and long. When even normal breathing causes pain in the side, look for this trigger point. The serratus anterior rotates the scapula upward, allowing the arm to be raised. It can be strained by heavy lifting, athletic overexertion and the tension caused by chronic anxiety.

The obliques, which are the muscles on the sides of the abdomen, in addition to causing pain in the side, are a common source of testicular pain, also called "stone ache." This harmless but worrisome discomfort is referred from a trigger point at the junction of the external oblique and the leg, in a kind of corner just outside the border of the rectus abdominus. Use ischemic compression here, pressing and holding the trigger point for 20 to 30 seconds.

Next month we will examine the arm, hand and fingers, another quite vulnerable area for massage therapists, musicians, computer users and piano technicians.

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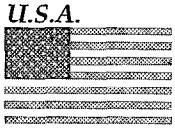

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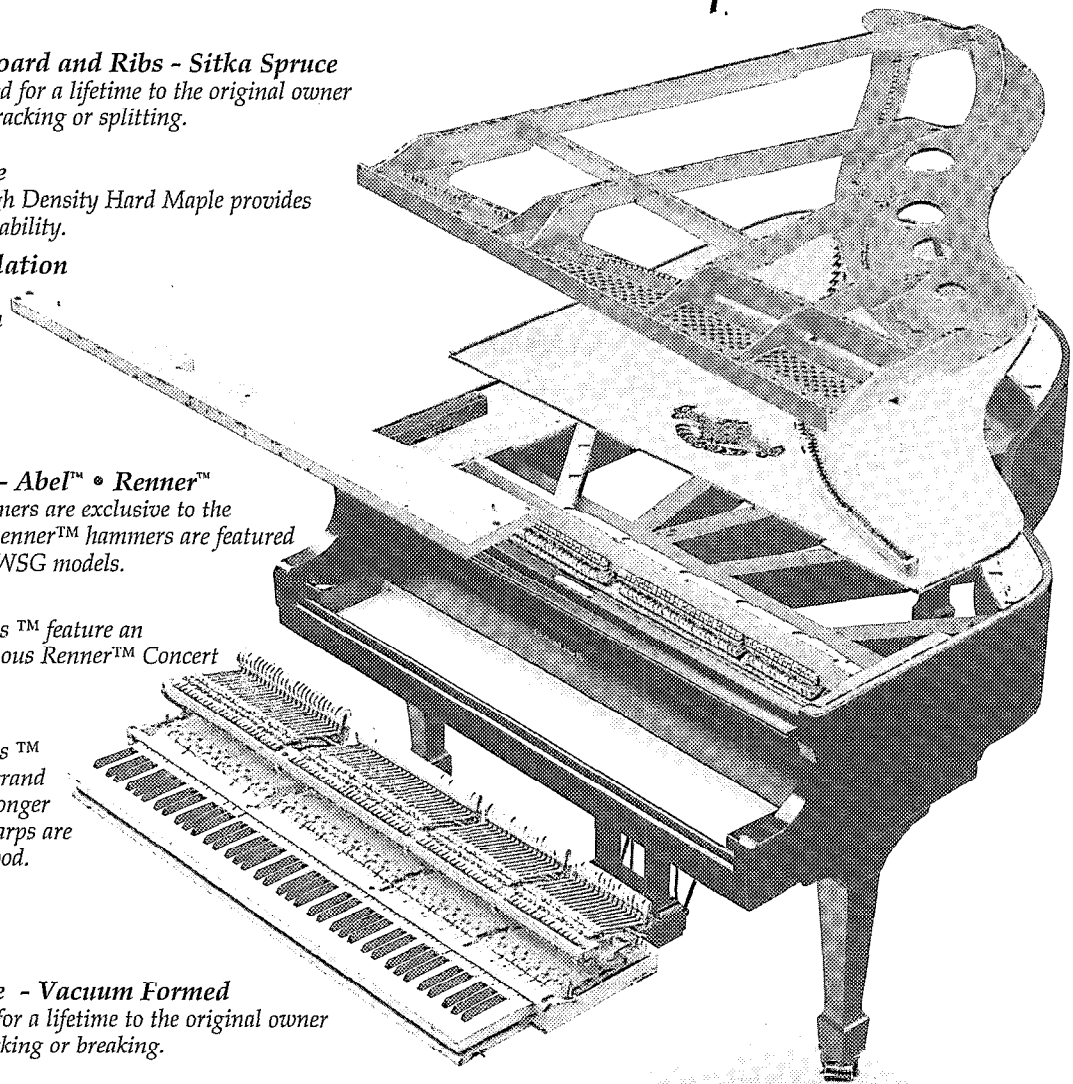

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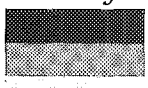

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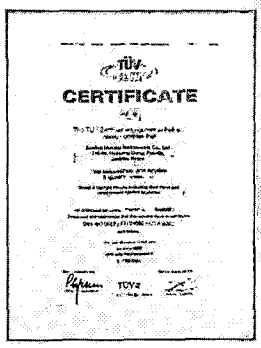

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The Violin Temperament

By Steve Fairchild, RPT
Long Island-Cristofori Chapter

Many of you knew my father, Robert Fairchild, as a strong supporter of PTG and the personal tuner to some of history's greatest musical talents, among whom were George Gershwin, Benny Goodman, Tommy Dorsey, Guy Lombardo, Carmen Cavallaro and the list goes on. In fact if you wish to hear his tuning, listen to the recording by Carmen Cavallaro of Chopin's "Polonaise" and Richard Addinsell's *Warsaw Concerto*, made back in the late 40s on Decca Records. As a teenager I was present while my father was on standby for this recording, copies of which I believe still exist.

Although he was a fine violinist, his career in pianos started at the Sohmer piano company where he chipped pianos back in the early 1900s for five cents each. As his tuning skills developed, he incorporated the violin tuning into his piano temperament and octave stretching. Later on he became artist director for the Hardman piano company at the New York Metropolitan Opera where he aided various world-famous artists in their piano selection. Contrary to popular opinion, Hardman was the Official Piano of the "Met" before Knabe prior to 1926. Once I had the pleasure of rebuilding a nine-foot Hardman concert grand – what a piano! Alas, those days are gone. He signed every piano he tuned in ink on the plate, much in the same way some artists do. Pride in one's work and appearance was his hallmark, from his waxed mustache to the doctor's bag in which he carried tuning tools. He felt carrying tools in a metal or plastic box, or in a canvas bag, made you look unprofessional.

His style of tuning had the following characteristics:

1. Temperament tuned in 4ths and extremely smooth 5ths.
2. Treble octaves stretched to the max.
3. A tuning so solid there's no drifting even after hours and hours of hard playing.
4. Unisons tuned so they had life, yet no apparent beating.

As the Sanderson Accu-tuner was unavailable then, it's hard to know what his treble stretch values were; however, I've measured tunings by a few of today's tuners who use a similar technique. C8 generally ranges between 50 to 85 cents sharp. Again I noted the incredible stability especially in the third and fourth sections.

After years of watching my father tune, I still have difficulty incorporating his style of tuning into my own. Tuning by intonation is a hard concept for a scientific non-musical tuner like myself to accept. One of his descriptive comments about it was, "When you're done tuning, the arpeggios should have a Singing Tone."

An "Aural" Electronic Tuning

Using knowledge gained from my new "Autotune System III" computer tuning, which tunes the piano just the way the ear does, I've tried to create a temperament that's similar to the one my father used. It's been specifically designed for the Sanderson Accu-Tuner. You need a better-grade piano for steps 1-12 to work right; otherwise, my computer program is necessary to overcome erratic inharmonicity. The program employs my all-new Ic tracking system that averages the three Ic curves:

1. Real-time Hz
2. The projected linear curve
3. The mathematically ideal exponential curve.

Autotune System III uses notes 42 through 49 to start, and proceeds as follows:

Step 1 - Make an FAC stretch tuning
Step 2 - Tune D4 and A4 5th
Step 3 - Turn Accu-Tuner off, then turn it on again
Step 4 - Set machine to A5
Step 5 - Play A4 and stop lights with cent controls
Step 6 - Use reset function and reset to zero
Step 7 - Play D4 and stop lights with cent controls. The cents should read between 1.0 and 1.2 If it's larger, increase stretch number for A4 and repeat steps 1 to 7. (Note: A 1-cent increase in the A4 stretch number equals about .6 to .8 cents between D4 and A4, depending on the A4 & C6 stretch sizes.)
Step 8 - Turn Accu-Tuner off then turn it on again
Step 9 - Remake an FAC stretch tuning
Step10 - Tune remaining notes between 42 (D4) and 49 (A4): D#4, E4, F4, F#4, G4, G#4
Step 11 -Turn Accu-Tuner off then turn it on again
Step 12 -Tune the next three descending 5ths the same cent width as D4 to A4: C#4-G#4, C4-G4, B3-F#4.

Example: Set machine to G#5 and play G#4. Use CENTS buttons to stop lights. Use RESET function and reset to zero. Press CENTS UP and put cents amount of D4-A4 in cents window. Should be as stated before, 1.0 to 1.2 cents. Play and tune C#4 until lights stop. C#4-G#4 is now correctly tuned. The object is to have 1.0 to 1.2 cents between the 3rd partial of the lower note of the 5th and the 2nd partial of the upper note of the 5th. The three acsending fifths to the right are to be treated in the same manner, D#4-A#4, E4-B4, F4-C4.

All the above 5ths will be at one-half their normal beat speed, or about .5 bps. This is the best compromise of the upper partials in this area. Trying to deal successfully with the 6:4 and higher partials may produce an incurable mental illness in some technicians — the same emotional instability that fine-tuning a Lester spinet produces.

The 4ths in this section will tend to range between 1.5 and 2.0 bps. 3rds should change nicely, although it's my opinion a perfect acceleration is not as important as smooth linear 5ths.

Extending the Tuning

Tune the next descending 13 notes (38 through 25) by octaves .5 to .8 bps wide and check the ascending 5th, 4th and 3rd. Octaves are tuned at the 4:2 level; use the 3rd-10th test. 5ths should quickly taper to zero beats over the next five notes; use the 10th-6th test. Over these same five notes, numbers 38 through 34, the 4ths should taper to 1.0 bps.

These 5th and 4th values will carry you down through notes 33-25. Strangely enough, down in this area the 5ths are somewhat reminiscent of Jim Coleman Sr.'s "Pure 5ths."

Continued on Next Page

The Violin Temperament

Continued from Previous Page

Now that notes 25 through 49 are tuned you can finish the bass and treble with your own aural values.

About Tuning Devices and Accuracy

Here is a warning to those who use an old-style Sight-O-Tuner. My research had uncovered a scale error in the cents dials. That is, if you turn the dial away from zero, the actual reading is greater by different amounts depending on which note you're on. Cents readings obtained this way are invalid and can lead only to fraudulent, misguided conclusions. Of course, most technicians who followed my lectures were made aware of this 20 years ago and have switched to the SAT in their search for true accuracy.

Three outputs on the rear of the SAT were my innovations. I realized a long time ago that it was necessary to have an output at the pitch reference so it could be hooked to an independent monitor such as a frequency counter. Only in this way could the machine's accuracy be checked. This is how I discovered the scale error in the old SOT. Without this ability, the readings of any machine shouldn't be trusted completely, especially if you're not a superior aural tuner. The Accu-tuner's light pattern can detect pitch changes as little as .005 hertz at 440. An input for a mag-netic microphone has the advantage of not being affected by external noise — an absolute must when tuning during a full orchestra tuning of their instruments prior to the concert. Lastly, an output at the filter which, if used properly, can aid in beat recognition, and when used in conjunction with the mag-pickup can put the note into a loop causing a steady tonal output, for better partial measurements. As far as I know, no other electronic tuning device has these great features.

Autotune Intervals for Acrosonic Spinet

Just for fun, here's an "Autotune" version of a temperament for a 36" Baldwin Acrosonic. In my view it was the greatest small piano ever built. Values are in Beats Per Second.

3RDS (5:4)	4THS (4:3)	5THS (3:2)
F3-A3= 7.1	F3-A#3= 0.6	F3-C4= 0.4 narrow
F#3-A#3= 7.4	F#3-B.3= 0.9	F#3-C#4= 0.6 narrow
G3-B3= 7.2	G3-C4= 1.4	G3-D4= 0.4 wide
G#3-C4= 7.5	G#3-C#4= 1.2	G#3-D#4= 0.3 wide
A3-C#4= 8.0	A3-D4= 1.1	A3-E4= 0.2 wide
A#3-D4= 8.4	A#3-D#4= 1.3	A#3-F4= 0.0 zero
B3-D#4= 8.7	B3-E4= 0.9	
C4-E4= 9.3	C4-F4= 0.9	
C#4-F4=10.1		

OCTAVES (4:2)
A3-A4= 0.5
F3-F4= 0.6

Note: The 6:4 partials of the above 5ths will be at 5 bps even though the 3:2s are slow and some are wide. That's why, as stated before, 6:4s are useless. Of course, on a low or smooth inharmonicity scale you can make anything fit. The 3:2 test was devised by Al Sanderson and is not in most older tuning books.

Example: The difference in speed between the descending 6th from the lower note of the fifth, and the descending 10th from the upper note of the fifth, is the speed of the fifth. If the 6th is faster than the 10th, the fifth is narrow. If 6th and 10th are the same speed, the fifth is zero beat.

An Argument Against 6:4 Testing of 5ths

My "Autotune" analysis of various scales shows that the 6:4 test (minor 3rd\major 3rd) seems to work well only on Steinway grands. I guess this is why technicians felt it was good for all pianos.

Here's a random sampling of pianos we all tune most every day. I think you'll see how useless 6:4 testing really is. Again, if the 3:2s weren't tuned extra slow the 6:4 beats would be much worse than they are. This random sampling represents various lengths from less than 5ft. up to 6ft. grands.

Based on this new research it seems Jim Coleman Sr. is one of the few technicians who really understands how 5ths should be tuned.

VALUES=BPS:	SAMICK	KAWAI	KAWAI	PETROF	YAMAHA	YOUNG CHANG
6:4	SG140	GE-1	GS40	P4	C2	G157
F3-C4	4.0	0.9	1.7	2.0	1.6	3.0
F#3-C#4	4.1	1.5	2.0	2.1	1.6	2.8
G3-D4	3.2	1.9	1.7	2.3	1.8	2.5
G#3-D#4	3.6	2.2	2.6	2.2	1.9	2.5
A3-E4	4.2	3.9	3.1	2.7	2.1	2.5
A#3-F4	4.5	3.3	3.4	2.9	2.3	2.5

For those who wish to use the Accu-Tuner to recreate the temperament for a 36" Baldwin Acrosonic: tune the 4th partials of the notes listed, by the amount of cents indicated alongside.

F3= -1.1	C4= +3.5
F#3= -0.2	C#4= +4.0
G3= -0.6	D4= +4.3
G#3= +0.3	D#4= +5.1
A3= +0.9	E4= +5.9
A#3= +1.5	F4= +6.7
B3= +3.0	

Example: For F3, set machine to F5. Set cents to -1.1. Tune F3 till lights stop.

For F#3, set machine to F#5. Set cents to -0.2. Tune F#3 till lights stop.

Continue the above pattern until all 13 notes are tuned.

Conclusion

It's my opinion that we have three categories of tuners:

Class M — The Machine Tuner.

Class B — The Beat-Rate Tuner.

Class I — The Intonation tuner.

Class M: Is the least desirable of the three. Not being able to tune by ear means you relying on the machine, which by its very nature is an idiot. Accurate aural crosschecks are needed if high quality piano tuning is the goal.

Class B: Will produce a tuning good enough to pass the PTG RPT and CTE tests.

Class I: Is the ultimate tuning art form. It's hard to acquire it even with years of practice. Especially if, like me, you weren't born a child prodigy like my father. Probably will not pass the PTG RPT and CTE tests as they are now set up. Perhaps that might change.

I once asked my father his opinion on strip-muting. He answered: "Tuning with one wedge is done so the tonal qualities of the notes already tuned will remain true. The dissonance of strip-muted notes is ever present and affects

interval perception. You wouldn't tone-regulate a strip-muted piano. I run the arpeggios and listen to the completely tuned note. If the intonation seems off I will retune it to fit. The arpeggios have to *feel right.*"

This "feel right" statement is not very scientific by my standards, but seems necessary to achieve this ultimate tuning. As I stated earlier, his unisons — although not beating — had what I would call "invisible motion." This motion plays a large role in the overall interval/arpeggio feel, and unison tone color, according to his view: A "Singing Tone," as Robert Fairchild described it. Perhaps this Class I tuning is in many respects a performance, in the same way world-famous violinist Isaac Stern does more than just play the notes, he feels and interprets them.

If the above is true, then most of us, not having the gift, must do the best we can with what we have. If we're lucky enough to hear such a tuning, there's always the chance we can learn something from it.

More People at Providence

Pat Ludden, Chicago, IL Chapter, studies the convention program guide during a break in classes.

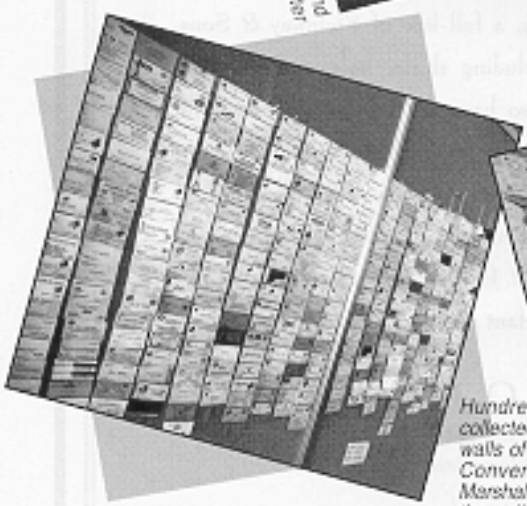
Benjamin Treuhaft, Berkley, CA, from left, Hugo Landolfi, Bueno Aires, Argentina, and David and Kent Lovell, Trinidad, West Indies, relax between classes.

John Dewey, Central Illinois Chapter, from left, Richard West, Nebraska Chapter, and Matt Deffley, Charleston, SC Chapter, take a break outside of the Rebuilders Galley in the Rhode Island Convention Center.

Patricia Murphy, Boston MA Chapter, and Karen Atkinson, Connecticut Chapter outside of the Rebuilders Gallery.

David Flanders, Rhode Island Host Chapter Chairman, from left, Wade Johnson, Rhode Island Chapter, and Clayton Harmon, Western Carolinas, NC Chapter at the Host Chapter Table in the Convention Center.

Ricki Kiss, Austin, TX Chapter, goes over her notes between classes.



Hundreds of piano technician's business cards collected by Past President Sid Stone adorned the walls of PTG's temporary office in the Rhode Island Convention Center. Immediate Past President Marshall Hawkins found his card while looking through the collection. Unfortunately, most of the collection was stolen on the last day the Exhibit Hall was open while Stone was taking down his collection.

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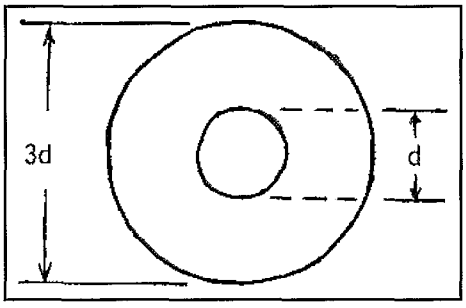
Some Thoughts on the Design of Bass Strings — Part III

By Richard M. Brown, RPT
Portland, OR Chapter

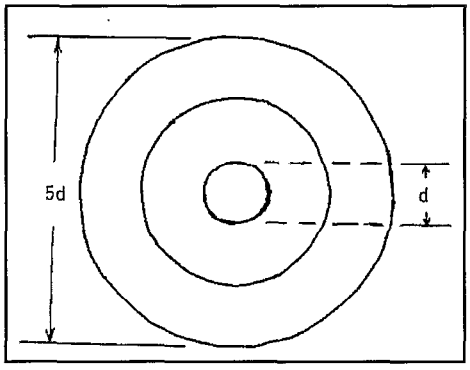
In Part I of this series, we discussed tension decisions in wrapped strings and developed five principles governing such decisions. In Part II, we used concepts of inharmonicity to further define wrapped string design, and we determined that core size should be selected for a 66 percent breaking point at pitch tension, with a warning that mechanical constraints would force us to modify this principle. This installment is perhaps the least scientifically sound, but until someone contributes a more competent analysis, I'll try to develop a scaling method that is both predictably successful and at least intuitively reasonable.

Consider the following diagram of a singly wrapped bass string:



Here you have a core diameter **d** where wrap thickness is likewise of diameter **d**, for an overall diameter of **3d**. The ration $\mathbf{D_2/d = 3}$. Actually, there is some flattening of the wrap at the tensions used for stringmaking, amounting to three percent for singly wound strings, which becomes a source of potential error. More will be said about flattening later.

If we select a wrap thickness much above that of our core, the ratio of copper mass to core contact area increases, with increased likelihood of buzzing. An arbitrary but reasonable limit of the wrap thickness would appear to be the core diameter. Hence, for singly wound string, $\mathbf{D_2/d}$ should be less than 3. If we design a string such that $\mathbf{D_2/d = 3}$, our result will be $\mathbf{D_2/d}$ less than 3 once we figure three percent flattening during manufacturing. A similar concept limits the design of doubly wrapped strings. Consider the following diagram:



If we select a core **d**, and wrap thickness **d**, then $\mathbf{D_2/d = 5}$. Flattening probably factors more like five percent overall, and one would like to anticipate the effect for doubly wound strings, since the tension so closely follows the outer diameter figure. The $\mathbf{D_2/d}$ less than five limit for doubly wound strings seems reasonable by the same prior argument.

If we accept these practical constraints, we'll find that we must increase the core gauge around the midpoint as we descend the bichord section. The following table shows values for an idealized scaling of a 5'8" grand, perhaps the most common size encountered by technicians:

Continued on Next Page

Some Thoughts on the Design of Bass Strings

Continued from Previous Page

Note #	D/S	M/B	T	d	G	D_2	P	D_2/d	
1	D	M	222	.049	22	.245	37	5.0	
2	D	M	219	.046	20½	.232	40	5.0	
3	D	M	220	.044	19½	.222	44	5.0	
4	D	M	221	.042	18½	.212	49	5.0	
5	D	M	220	.040	17½	.202	53	5.0	
6	D	M	219	.038	16½	.192	59	5.0	
7	D	M	220	.037	16	.184	64	5.0	
8	D	M	219	.037	16	.175	64	4.8	
9	D	M	221	.037	16	.168	64	4.6	
10	D	M	220	.037	16	.160	64	4.3	
11	S	B	199	.048	21½	.145	34	3.0	
12	S	B	201	.046	20½	.139	37	3.0	
13	S	B	202	.044	19½	.133	41	3.0	
14	S	B	200	.042	18½	.126	45	3.0	
15	S	B	202	.040	17½	.121	51	3.0	
16	S	B	200	.038	16½	.115	54	3.0	
17	S	B	200	.037	16	.110	59	3.0	
18	S	B	200	.035	15	.105	64	3.0	
19	S	B	199	.035	15	.100	64	2.9	
20	S	B	201	.035	15	.096	65	2.7	
21	S	B	202	.035	15	.092	65	2.6	
22	S	B	198	.035	15	.087	64	2.5	
23	S	B	202	.035	15	.084	65	2.4	
24	S	B	201	.035	15	.080	65	2.3	
25	S	B	198	.035	15	.076	64	2.2	
26	S	B	200	.035	15	.073	65	2.1	
27	S	B	199	.035	15	.059	65	1.7	(treble bridge)
28	S	B	197	.035	15	.056	64	1.6	
29	S	B	199	.035	15	.054	64	1.5	
30		T	175	.047	21	(lowest unwound trichord)			

D/S indicates doubly or singly wound string

M/B indicates monochord or bichord

D_2 refers to overall string diameter

d indicates core diameter, with gauge value following

For simplicity, I've scaled monochords and bichords equitension, with the value for bichord tension half way between monochords and the lowest unwrapped trichord. The most treble bichord is designed so that the core (15 ga.) will be at 64 percent of breaking point. As we descend the bichords, we reach note #18 where the ratio of outer diameter to core reaches 3.0, our previously discussed arbitrary limit for mechanical reasons. If we persist in using 15 ga. core for the lower bichords, we risk buzzing strings, the type of buzz that twisting might not eliminate. So we must draw a line in the sand, and increase our core gauge progressively to keep the ratio at 3. This lowers our percentage breaking point and raises the inharmonicity, but there does not appear to be any realistic alternative.

A similar argument describes the monochord scaling design. The most treble monochord is a doubly wrapped string with core 16 ga. chosen to result in 64 percent breaking point at pitch tension. We reach a limit as we descend, at note 7, with an outer diameter/core ratio of 5. If we persist in using 16 ga. core down to A#1, our ratio would increase beyond 5, with likelihood of intractable buzzing. So we must increase the core gauge at note #6, which drops the percentage breaking point to 59, and the pattern follows that of the previously described bichords.

The technician now has the simple tools at hand to design an optimal scaling for wound strings, assuming he knows when to switch to doubly wrapped strings. A glance at the previous table reveals that as one descends in the bichords, the core gauge increases to the substantial value of 21 $^1/_2$ ga., which is probably as thick and stiff a core size as one would wish to coil on a tuning pin. Much thicker, and the wire won't fit through the eye. Another arbitrary but reasonable limit would be around 21 ga. for the largest core selected. Once the wrap/core ratio limit forces you to select a larger core than 21 ga., it would seem appropriate to utilize a doubly wrapped design for all lower notes. As you can see, I chose to preserve the entire bichord section singly wrapped, and elected to utilize a 21 $^1/_2$ ga. core for the lowest bichords, but this is the type of aesthetic value judgment all creative technicians will have to make. Designing a doubly wrapped string for the lowest bichord in an otherwise homogeneously singly wrapped bichord section might produce a tonal inconsistency that voicing could not overcome.

For the larger grands, 6'3" to 7'5", the switch from singly to doubly wound stringing will be confined to the monochord section, and the guidelines discussed above should make the decision effortless.

Final Comments

I have not discussed actual wrap gauge, because this is not strictly speaking a scaling decision, but one that the stringmaker chooses once he receives your order. One could assume equal wrap gauge for both inner and outer wraps of doubly wound strings, and this seems to be the most prevalent system in use. But not all expert stringmakers concur. Ari Isaac, from Montreal ships excellent bass strings throughout the world, but uses unequal gauges for inner and outer wraps. His reasoning? He claims that with equal gauges, the outer wrap falls into the grooves of the inner wrap, reducing ductility, increasing stiffness, and reducing responsiveness. Perhaps a technician forum could be assembled regarding this matter, along with scaling engineers to fuel the debate. Meanwhile, the technician will have to decide for himself (or herself).

We discussed flattening during wrapping, which reduces the anticipated diameter by about three percent for singly wound strings, five percent for doubly wound strings. Stringmakers do not usually calculate flattening – they know their materials, and if you specify an objective overall diameter, they should achieve it. There is, unfortunately, some real non-uniformity in the craftsmanship of fabricated bass strings, as many of you are only too aware. It would be best to discuss this matter with the stringmaker in advance. If the delivered strings prove to be smaller than the specs, one may decide to calculate flattening into the order and increase overall diameter by a suitable percentage. Remember, the string tension is proportional to the square of the overall diameter, so final errors in fabrication will have a noticeable effect on tension, hence on volume and tone.

A few more thoughts and I'll let you attach your neglected scientific calculators-concerning swedging, the use of a hammer or comparable blunt instrument to flatten the core where the wrap ends. There is an art to stringmaking, and there is a stretched-out learning curve while perfecting one's craft. The next time you inspect a bass string, examine carefully the point at which the wrap ends. One should see no more than a millimeter or two of swedging projecting beyond the wrap, and it should be of a modest sort that doesn't flatten the core by 50 percent. All your calculations of estimated breaking point are a wasted exercise if your stringmaker has decided to use his mallet for building physical muscle mass and has seriously degraded the structural integrity of the

core. If you have obtained such strings, you probably know that one or more will fail when brought up to pitch tension, an event that does unnecessary violence to your day and to your customer's peace of mind. One doesn't need an inch of swedging to firmly seat the wrap on the core – the less, the better.

It is worthwhile discussing swedging with the stringmaker. As we previously mentioned, one can unwrap some winding to equalize exposed core near the agraffe, but what if you go beyond the swedging? Those who have done this know the answer: the wrap instantly unravels, and the string must be refabricated, another example of Murphy's Law. It helps to know how long the swedging your stringmaker utilizes. That will give you some idea of a safe limit for such meticulous adjustments at final stringing.

In the final string design, one must accurately predict elongation at pitch tension. Dr. Sanderson offers a formula that ostensibly gives the answer:

$$e = \frac{PL}{8792}$$

e = elongation (inches)
P = percentage breaking point
L = string length (hitch loop to tuning pin)

I have used this formula for several rescaling projects, and have found that it underestimates elongation by 30 percent to 50 percent. The unwary technician will be little amused when the swedging reaches the agraffe at pitch tension. Therefore, pending better information, I would suggest a correction factor of at least 30 percent (to be safe, use 50 percent). Practically, this adds about half an inch to the calculated estimate of elongation for the wound strings in the larger grands. You must subtract the final elongation length from your wrap length specification.

The stringmaker requires the following specs:

- core gauge
- overall wrap diameter
- single Vs double wrap
- length from end of hitch pin loop to beginning of wrap
- length of wrap

Note that you don't have to send a "pattern." Because there is negligible elongation from the hitch pin loop to the beginning of the wrap, you do not require any compensating factor for this measurement. However, if you wish the exposed core ends to be sumetrical at pitch tension, an accurate estimate of elongation is imperative. And if you intend to do a bit of "fudging" by unwrapping at the agraffe end, you should know your stringmaker's swedging style.

The only measurements needed are the speaking length and the length from hitch loop end to start of winding. One might wish to modify the latter if your rescaling suggests this as appropriate. For example, if the original string had an inch or more of exposed core at the hitch end, redesign is certainly indicated to reduce the inharmonicity. But at this point you know what has to be done.

Bass strings must be twisted to prevent buzzing, in the direction of the wrap. Most strings will not accept more than 360 degrees of torque. Orienting the "spur" downwards tends to save skin on the knuckles. An excellent tool exists for twisting bass strings, available through all supply houses, which unfortunately scrapes the coating off the hitch pin. But it is preferable to touch up the hitch pin later with an artist's brush than to use unreliable tools and risk a slip with conspicuous injury to case or plate.

Summary of Bass String Rescaling

1) Precisely measure speaking lengths to nearest 1/16" (or 1mm).
2) Measure length from end of hitch loop to desired start of winding.
3) Determine tension for A#1 by the formula $\mathbf{T = 4.5\ L_s}$
4) Determine tension of lowest trichord unwound string by reference to table in Part I.
5) Set the lowest bichord tension midway between A#1 and the lowest trichord unwound string.
6) Use equitension scaling for monochords if change in speaking length is less than 20 percent
7) If change in bichord length exceeds 20 percent, consider smoothly increasing the tension at half the rate of length increase.
8) Accept abrupt changes in tension at monochord/bichord transition, and bichod/trichord transition. This compensates for the abrupt change in total mass of stringing.
9) Select appropriate values for exposed length of core and "step" (distance outer wrap protrudes beyond inner wrap).
10) Maintain a wrap/core ratio under 5 for doubly wound strings, under 3 for singly wound, to prevent intractable buzzing problems.
11) Subject to the constraint of #10, select core gauge so that the percentage breaking point is as close to 66 percent as possible.
12) Determine elongation factor, and subtract this value from the final length of wrap specified.
13) Consult with your stringmaker prior to placing your order. Be sure to discuss "step" specifications, swedging technique, and flattening experience during winding.

Bibliography

Baldassin, R. — "Formulas for Inharmonicity" *Piano Technicians Journal*, July 1988.

"Inharmonicity & Inharmonicity Formulas," *Piano Technicians Journal*, December 1988.

Brown, R., et al — "Rescaling the 1905 Steinway Upright", *Piano Technicians Journal*, June 1988.

Fenner, K. — "On the Calculation of the Tension of Wound Strings" (translation by Jim Engelhardt) *Piano Technicians Journal*, October, 1961.

"The Calculation of the Transition from Wound Strings to Plain Wire," *Piano Technicians Journal*, October, 1961.

Goddard, W.T. — *A Handbook of Strings of the Pianoforte.*

ISBN 0 9511917 0 5 Hartburn, Stockton-on-Tees, 1985, County Cleveland, TS18 5EZ, England.

McFerrin, M.V. — *The Piano - Its Acoustics*, Tuners Supply Co, 1972.

Piano Tone Building — American Steel & Wire conference, 1916-1919.

Reblitz, A.A. — *Piano Servicing Tuning & Rebuilding*, Vestal Press, NY 1976, 2nd Edition, 1992.

Roberts, D. — "The Calculating Technician," series of articles, *Piano Technicians Journal*, Sept. 1979 to April 1981.

Sanderson, A. — "Piano Technology Topics" (2 page brochure), 171 Lincoln St, Lowell, MA 01852.

Thomma, L. — "On Calculating the Diameter & Tension of Wound Strings" (English translation by Jim Engelhardt), *Piano Technicians Journal*, August 1967.

White, W. — *Theory & Practice of Piano Construction*, Dover Publications, 1975.

The Puzzler

By Dan Levitan, RPT

Puzzler #12 — Wild Strings

Puzzle mail (snail mail only) should be sent to Daniel Levitan, Puzzle Editor, 530 First Street #6, Brooklyn, NY 11215. Elaborations on previous puzzles will be printed, even at the expense of the puzzle editor's dignity. Especially welcome are ideas and suggestions for future puzzles, subject to whatever modification the whim of the editor may deem necessary.

His fingers poised above the keys, under the expectant eyes of his customer, he contemplated with a not unpleasant sensation of nervousness the moment that divides the unknown from the known; the moment before he would start to learn what he could about this piano and decide what, in the next hour and a half, he'd be able to get from it. Of course, he knew a little already; she had told him over the phone that the last tuner — she couldn't remember how many years ago — had said the tuning probably wouldn't hold. Yes, in fact she distinctly remembered him saying something about loose pins and cracked wood. And now, he knew the make — a decent old American make — and could see for himself that the piano had a long history, though it appeared that these days it served principally as a display site for the several dozen framed photographs of a very young girl that decorated the lid. The girl would be Tiffany Brittany, who, he had been told, was starting to take lessons, and when she came to visit, liked to play. Tiffany Brittany had complained to Grandma that the piano didn't sound right, and so here he was.

He began a chromatic scale and as he passed through the alto he hit a series of wild unisons. That would be the loose pins, he thought. He played the rest of the notes. The action was not bad, nor the pedals. He checked the pitch; about ten cents down. He returned to the wild notes to investigate. He muted off the individual strings in turn, looking for a pattern. It seemed that most of the wild strings were right-hand strings in the unisons. It was as clear as a coat of fine French polish; there was a crack in the pinblock next to the stretcher in that section. He got out his tuning hammer and did some rough tuning to gauge the tightness of the pins. He was a little surprised to find them not all that loose; not tight, certainly, but not ready to pounce flat at a touch, either. Still, it was late May, and he reflected that the warm weather would have tightened up the wood around pins that slipped in the dryness of winter.

He told his client that he felt he could tune the piano. No, she needn't move all the carefully arranged photos; he would work with the lid down, glad, in fact, for added protection against the possible flight of a broken bass string. The tuning went uneventfully, though; the wild strings came right up to pitch; and he left assuring his client that the tuning would probably hold just fine until next winter.

But the following week he got a call from her. Tiffany Brittany had been by and she said the piano still didn't sound like her teacher's. Could he come by and take a look? Tiffany Brittany indeed, he thought, but he made plans to stop by. When he did, the following week, he was surprised to find that a number of strings, maybe half a dozen, had indeed gone south. He pulled them back up, and was puzzled to find that the pins still felt firm. Further investigation explained the mystery — how?

Solution to Puzzler #12 — Wild Strings

The cracked wood turned out to be the wood of the bridge cap; and the loose pins, bridge pins. Splits in the bridge cap can produce wild unisons like those produced by loose tuning pins. There are several common characteristics of such splits, though, which provided clues that he missed. One was the fact that it was right-hand strings that had flattened, close to where the bridge cap usually splits, rather that left-hand strings, whose tuning pins are closer in the pin-block to the plate flange where pins often loosen first. Another clue was the fact that the problem was in the alto, where bridge cap splits are more common, rather than in the tenor or bass, where loose tuning pins are more common. Finally, the wild notes didn't appear in a whole tone sequence, as they might possibly have done had the problem really been a crack in a lamination of the pin block. ■

PTG Review
PIANO TECHNICIANS GUILD
DEDICATED TO PTG NEWS • INTERESTS & ORGANIZATIONAL ACTIVITIES

Kansas City '99 - Now's the Time to Plan!

By John Ragusa RPT
1999 Institute Director.

The secret to success is planning. And if you're not planning on being in Kansas City next July, you're not planning for success. Many piano technicians wait until spring to give the Annual Convention & Institute serious thought, but that might be too late if you haven't set the money aside just for that purpose.

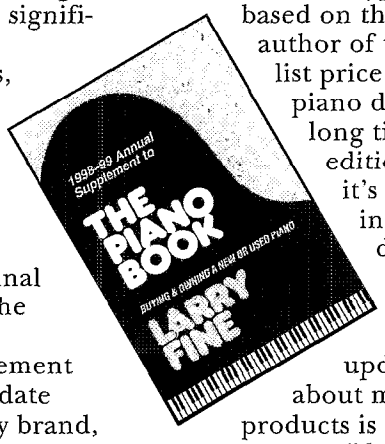
How much will it cost? Well, let's break it down. The first thing you'll need to pay is registration. That's about $200. If you plan on attending each day of Institute classes you'll need to stay four nights. At $120 per day (includes tax), that's $480. Get a roommate and you'll cut that nearly in half. Plane fare from either coast bought in advance will average about $250 round-trip. Meals can be done at $35 per day. Including travel days, that comes to $175. You won't be able to resist at least one or two items in the exhibit hall, so throw in another $50. Maybe you'll take in a hands-on class or two. Add another $20-$40. Total: $1,195. You have ten months from now to save, so you will need to save just $119.50 per month, or $29.88 per week. That's less than half the price of one tuning per week to spend on surrounding yourself with many of the best piano technicians in all of North America.

And there are ways to cut costs below this generous estimate. As I noted above, get a roommate and lower the cost of lodging. If you live close enough, you can drive to Kansas City and reduce your costs even further. And of course all of these expenses are tax deductible. But now, the really good news: What you learn at a Guild Institute — improved operating efficiency, better business techniques and new contacts, the latest innovations, more products and services to offer — will increase your income enough not only to pay for this great event but push you even further into the profit margin. Think about it: You can't afford not to be there!

John Ragusa, RPT, Kansas City 1999 Institute Director, 7318 Ponderosa Drive, Tampa FL 33637-6438, Phone/Fax: (813) 988-0396.

1998-99 Supplement to The Piano Book Released

JAMAICA PLAIN, MA – Brookside Press, publisher of The Piano Book by Larry Fine, announces the release of the 1998-99 Annual Supplement to *The Piano Book*. This companion volume, published each August, contains a listing of all significant changes to piano manufacturers, models, and brand names since the third edition of *The Piano Book* was published at the end of 1994. Many new brand names not mentioned in the original book are included in the Annual Supplement.



The Annual Supplement also contains an up-to-date listing of virtually every brand, model, style, and finish of new piano on the market in North America - more than 2,400 models in all - along with its list price. To provide a level playing field for price comparison by the consumer, list prices are calculated based on a uniform markup from the published wholesale price. An additional section advises consumers on how to estimate a typical "street price" based on the observations of the author of typical discounts from list price being offered by piano dealers. "Given the long time span between new editions of *The Piano Book,* it's impractical to provide in the book itself the detailed model and price data that piano shoppers increasingly seek. Similarly, updated information about manufacturers and products is needed in a timely manner ... I hope this modest companion volume will effectively extend the "shelf life" of *The Piano Book* as a valuable reference work, and serve as an additional information resource for piano buyers and piano lovers." - Larry Fine, from the Introduction to the Annual Supplement.

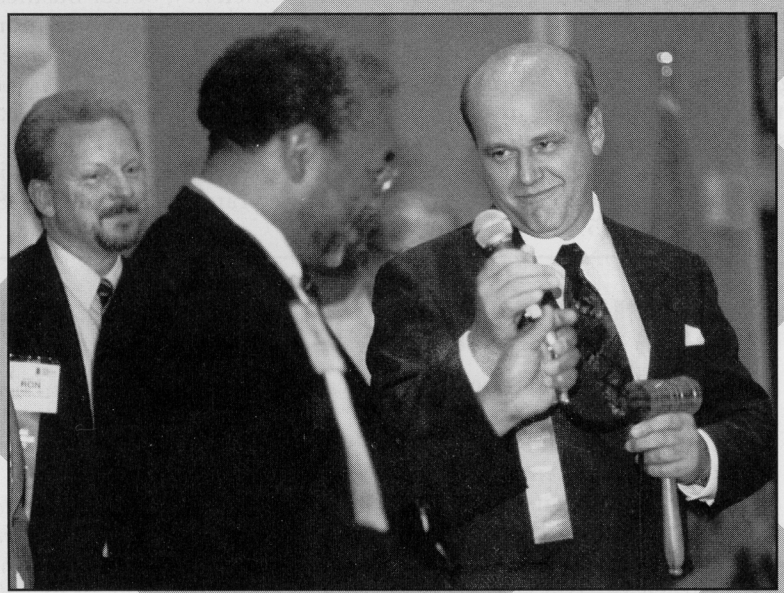
Since 1987, *The Piano Book: Buying & Owning a New or Used Piano*, by Larry Fine, has been the standard consumer reference in the piano business. It is also used extensively as a reference, sales aid, and teaching aid by piano dealers, technicians, and teachers.

The 1998-99 Annual Supplement to The Piano Book is priced at $14.95 plus $3 shipping/handling ($5.00 s/h for international orders). Quantity discounts are available. To order, or for more information, write or call: Brookside Press, P.O. Box 178, Jamaica Plain, MA 02130 USA. (800) 545-2022 or (617) 522-7182. Fax (617) 524-2172. E-mail: pianobk@tiac.net. Web site: www.tiacnet/users/pianobk

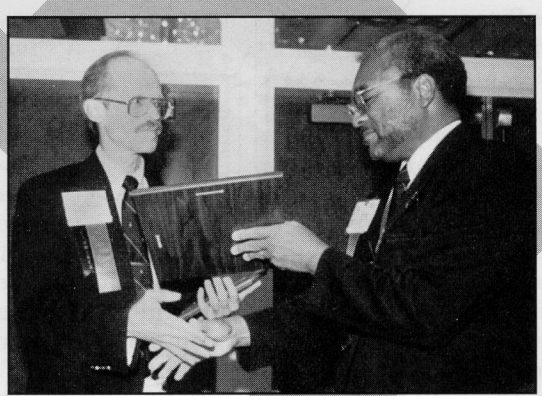
Golden Hammer Banquet

Immediate Past President Marshall B. Hawkins, RPT, makes an address at the Golden Hammer Banquet.

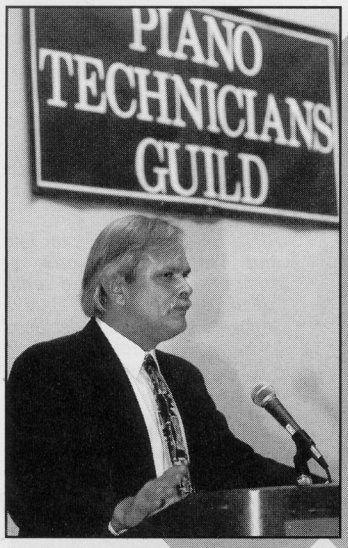
Dr. Al Sanderson, RPT, recieves a round of applause after accepting the 1998 Golden Hammer Award.



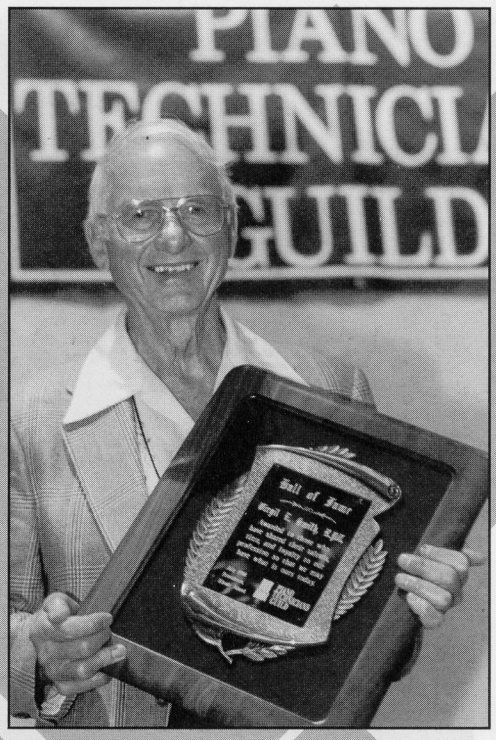
As PTG Past President Ron Berry looks on, Immediate Past President Marshall B. Hawkins turns over the microphone after presenting a new gavel to 1998-99 President David P. Durben during the banquet.



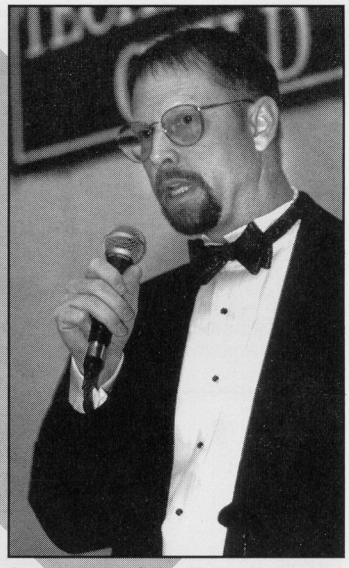
Immediate Past President Marshall B. Hawkins presents Presidential Citations to retiring Regional Vice Presidents Ward Guthrie, left, of the Pacific Northwest Region, and Michael Travis of the Southeast Region.



Patrick Rucker, Project Manager for Piano 300 of the Smithsonian Institution, addresses the Opening Assembly.

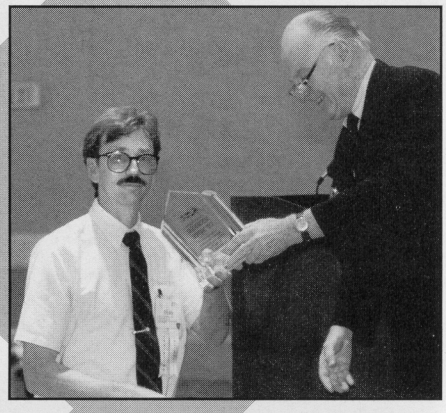


RPT Virgil Smith with his Hall of Fame Award. During the Opening Ceremonies Steve Fairchild, RPT, was also presented with the Hall of Fame Award. He was unable to attend the annual convention.

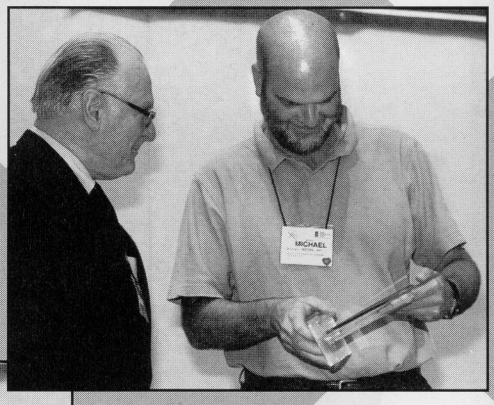


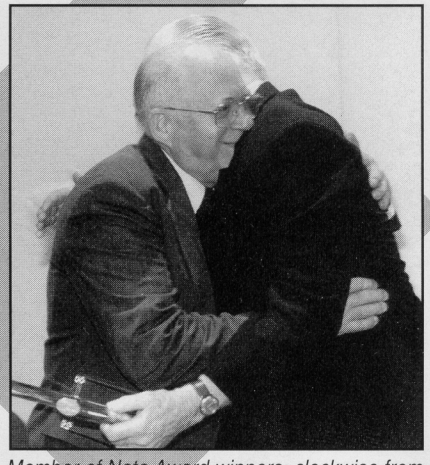
Journal *Editor Steve Brady emceed the Opening Assembly in Providence, RI.*

RPT James Ellis is congratulated by Journal *Editor Steve Brady after receiving the Jack Greenfield Award. Not present to receive their awards were RPTs Clair Davies and John Hartman.*

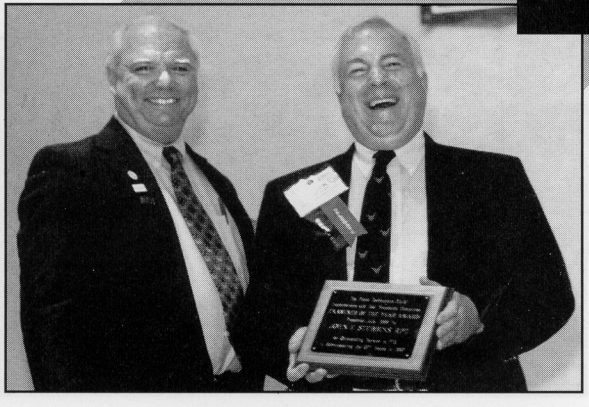


Opening Ceremonies





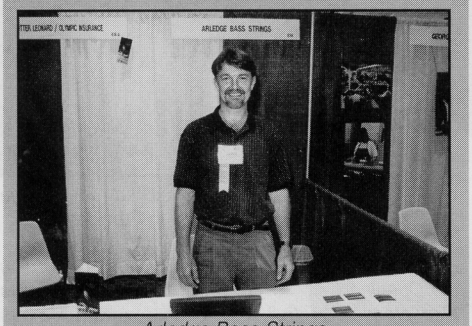
Member of Note Award winners, clockwise from above, RPTs Gary Neie, Michael Wathan, Fred Tremper and Dean Reyburn, are congratulated by Ben McKlveen.



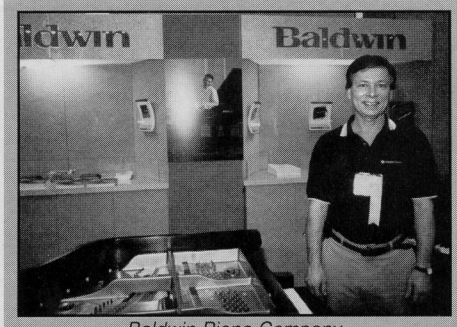
Testing Committee Chairman Richard Bittner, left, with Examiner of the Year Jack Stebbins at the Opening Ceremony.

Class Acts

American Piano Supply Company
Clifton, NJ

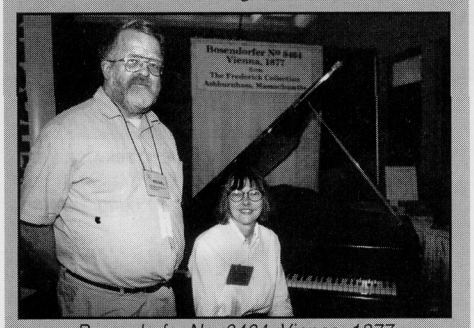


Arledge Bass Strings
Nashville, TN



Baldwin Piano Company
Loveland, OH

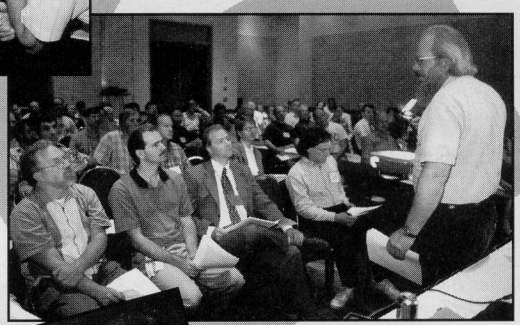
Blüthner/German Piano Imports, LLC
Lansing, MI



Bosendorfer No. 8464, Vienna, 1877
The Frederick Collection of Ashburnham, MA

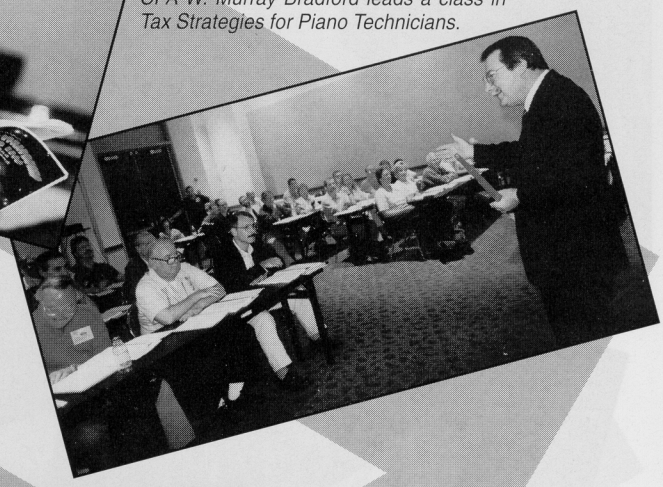
RPTs Bill Springer, center left, and Tremaine Parsons, at computer below, lead technicians in the first Cyber Cafe, a series of work stations designed to show technicians how to integrate computers into their workplaces.

Phineas Valenti, right, watches as Alice Alviani sets a hammer line with Jim Herrick in the Grand Hammer Installation hands-on class.

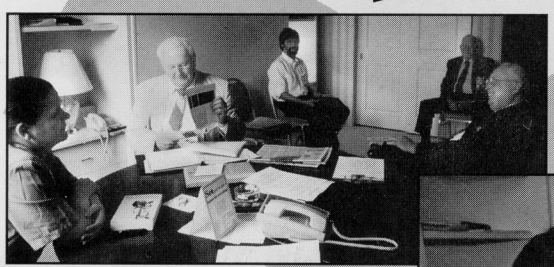


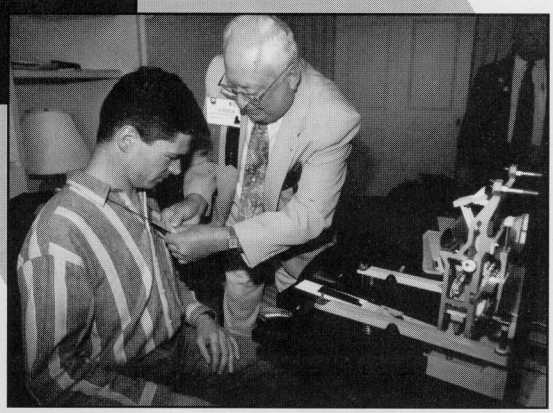
RPT Del Fandrich leads a discussion on Piano Anatomy.

Northeast RVP Ruth B. Phillips, RPT, center at right, discusses Getting and Keeping Good Customers during the Business Roundtables in the Rhode Island Convention Center.



CPA W. Murray Bradford leads a class in Tax Strategies for Piano Technicians.



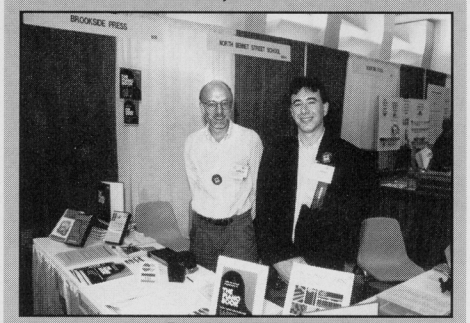


Testing examiners Elizabeth Ward, from left above, Orman Pratt, Curtis Spiel, Gary Neie and Chuck Erbsmehl take a break in the Examiners' Office in the Providence Hyatt. At right, Chuck attaches a New RPT ribbon to Stephen Powell, Auckland, New Zealand, who passed all of his tests during the Convention.

Worth the Effort

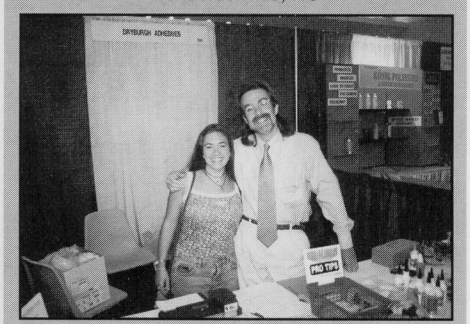
RPT Wade Johnson, above, of the Rhode Island Chapter, had to improvise during the Opening Assembly, stacking a couple of chairs to makeup for the lack of a proper piano bench. Marcel Carey, RPT, at right, made the nearly 350 mile trip to Providence, RI, from Rock Forest, QC, Canada, on his bicycle. Marcel made the trip in four days, traveling 80 to 90 miles per day across four states to get to Rhode Island; staying in hotels along the way. He said he usually doesn't have the time to make such extended bicycle treks, but with the closeness of the Convention to his home he opted to make the trip on two wheels and enjoy the scenery along the way.

Brooks, LTD.
Old Lyme, CT

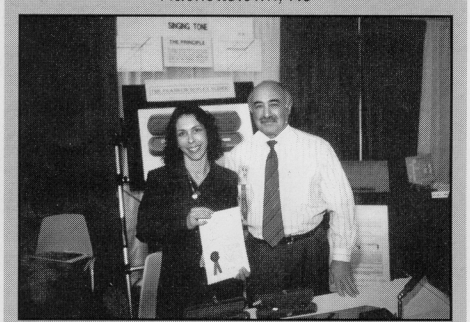


Brookside Press
Jamaica Plan, MA

Dampp-Chaser Electronics
Hendersonville, NC



Dryburgh Adhesives
Hackettstown, NJ

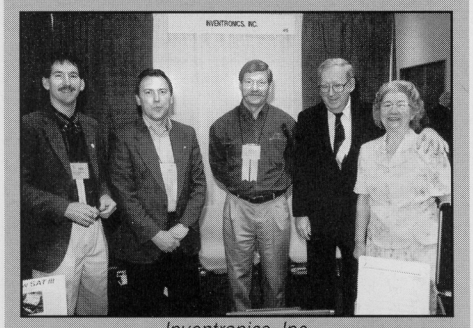


Singing Tone
New York, NY

Gallery of Rebuilders

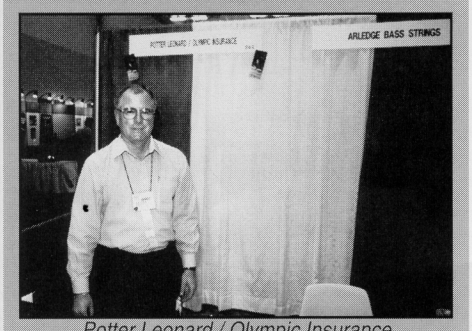
Geneva International Corp.
Wheeling, IL

George Brown College
Ontario, Canada

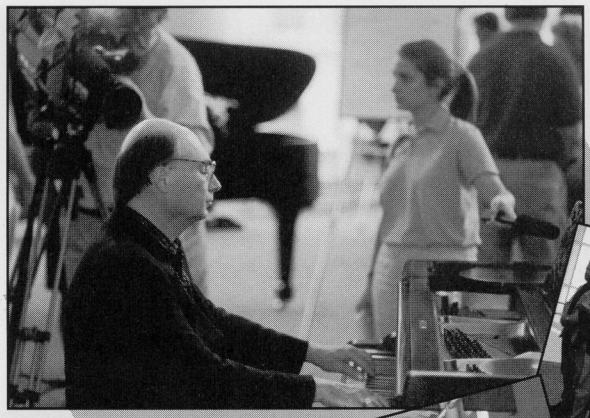


Inventronics, Inc.
Chelmsford, MA

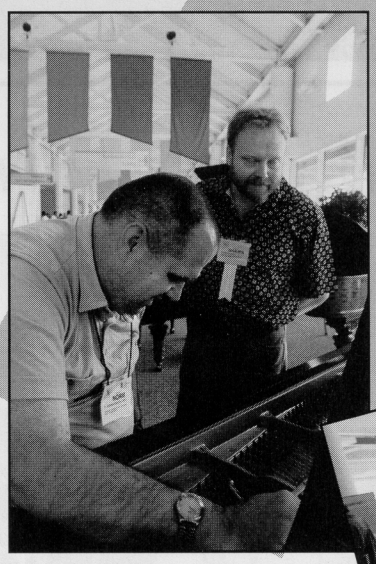
Kawai Pianos
Compton, CA



Potter Leonard / Olympic Insurance
Kenmore, WA



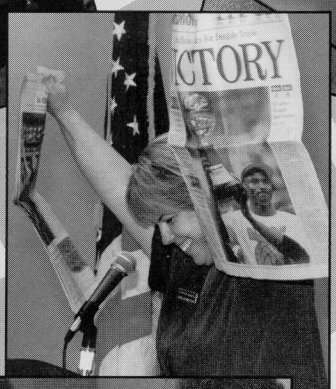
Top, a local TV news crew photographs RPT Anthony Pascone as he plays an 1898 Steinway & Sons D, rebuilt by David Hughes. Above right, piano rebuilders applaud as PTG President Marshall B. Hawkins, above, cuts the ribbon to officially open the Gallery of Rebuilders in the Rhode Island Convention Center. At right, technicians fill the Gallery of Rebuilders, examining the handiwork of the rebuilders.



Shawn Hoar, RPT, right at left, looks on as RPT Norman Banta examines Hoar's rebuilding work. Below, as Bob Alechnowicz plays Asa Wilkerson studies the bridge notching of a rebuilt piano.

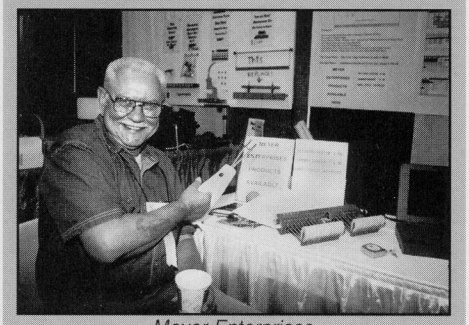
1998 Institute Committee

1998 Technical Institute Committee members, above from left, Dale Probst, Laura Kunsky, Director Evelyn Smith, Wally Brooks, John Ragusa and volunteer Allan Gilreath. At left, Dale and Evelyn plan piano moves with Bob McCarthy of Death Wish Piano Moving.

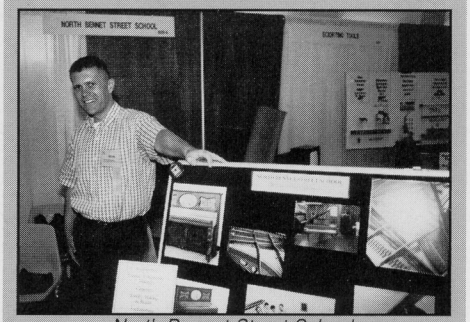


1999 Institute Director John Ragusa, above left, makes an address at the Golden Hammer Banquet. Providence Institute Director Evelyn Smith describes the Technical Institute during the Opening Assemby where Institute Assistant Laura Kunsky, left, took the opportunity to celebrate the Chicago Bulls' Championship. Vivian Brooks, RPT, center left, was awarded a Presidential Citation during the Opening Ceremony in recognition of her regular assistance to the Institute Committee.

PianoDisc – Mason & Hamlin
Sacramento, CA

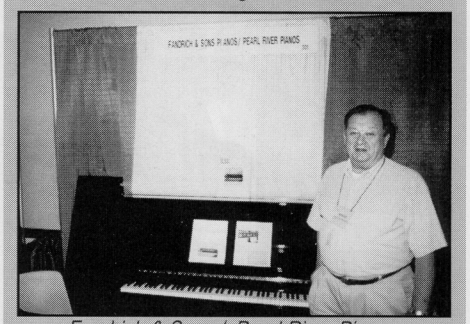


Meyer Enterprises
Santa Clara, CA



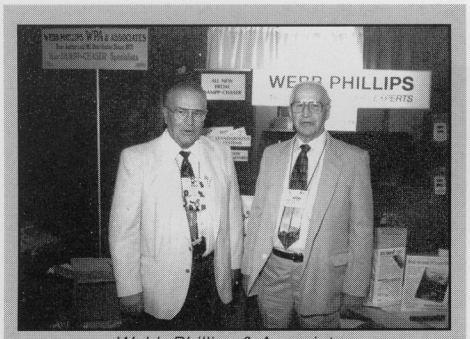
North Bennet Street School
Boston, MA

Pacific Piano Supply Co.
Northridge, CA

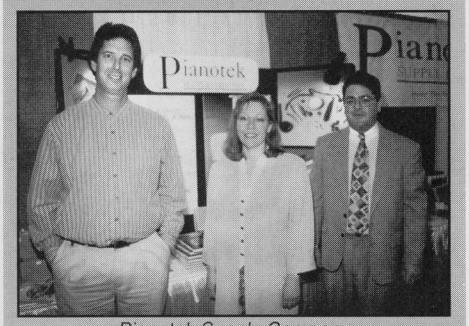


Fandrich & Sons / Pearl River Pianos
Seattle, WA

Presidents, Council & the Board



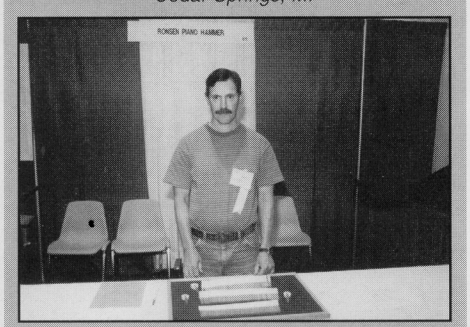
Webb Phillips & Associates
Hatboro, PA



Pianotek Supply Company
Ferndale, MI

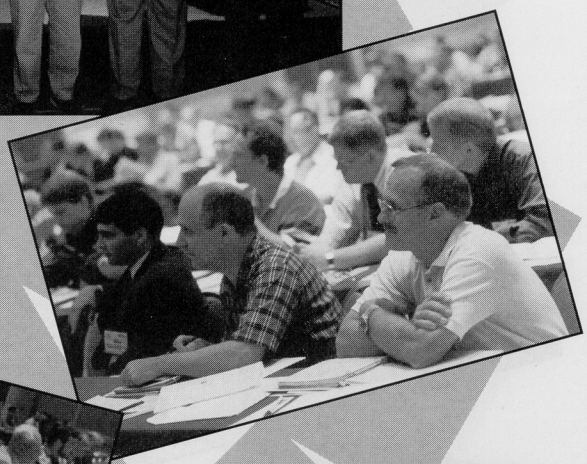
Renner USA
Weston, CT

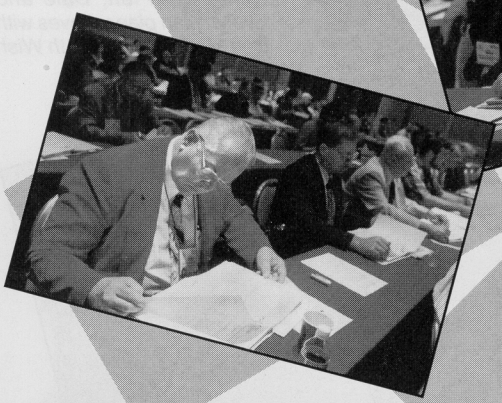
Reyburn Piano Service, Inc.
Cedar Springs, MI



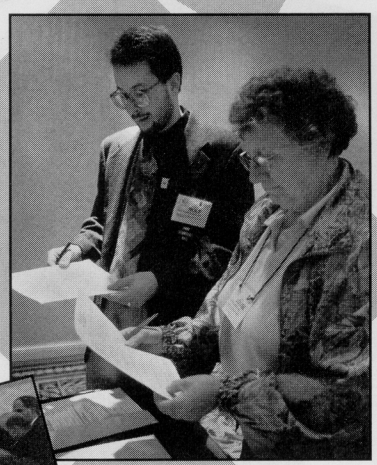
Ronsen Piano Hammer
Boiceville, NY

PTG Past Presidents, from left, Wendell E. Eaton, Charles P. Huether, President Marshall B. Hawkins, Ron Berry, Nolan Zeringue and Leon Speir appear at the Opening Ceremonies of the Providence Convention.





RPTs Joe Malecki, above right from right, Roland Kaplan and Ron Torrella listen to Council debate as Fred Raudenbush, above, reviews a study.



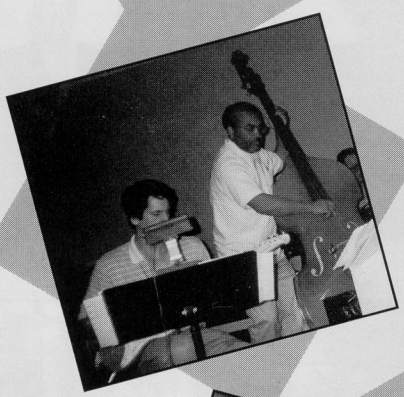
Above, Central East RVP Rolf von Walthausen and Louise Austin, Madison, WI Chapter go over paperwork following a Regional Meeting. The PTG Board of Directors, left, in the Post-Council Meeting.

1998-99 PTG Board of Directors, seated from left, Vice President James Birch, President David Durben, and Secretary-Treasurer Gracie Wagoner, and standing from left, Northeast RVP Ruth Phillips, Southeast RVP Robert Mishkin, Western RVP James Coleman Jr., South Central RVP Jack Wyatt Sr., Central East RVP Rolf von Walthausen, Central West RVP Kent Swafford, Pacific NW RVP Taylor Mackinnon, and Immediate Past President Marshall Hawkins.

Parties & Play

Jazz Artist Ahmad Jamal, right, performs in Waterplace Park during an outdoor concert sponsored by Steinway & Sons. The concert was well attended by technicians and was open to the public as well, below.

The Providence Westin forms a background across the river from the Waterplace Park stage.



PTG Immediate Past President Marshall Hawkins, above right, plays bass with RPT Roger Aycock during the Yamaha Reception.

An ice sculpture graces the main table at the Young Chang reception.

RPT Larry Crabb, above left, directs the Barbershop Singers for an appreciative audience.

Samick Music Corp.
City of Industry, CA

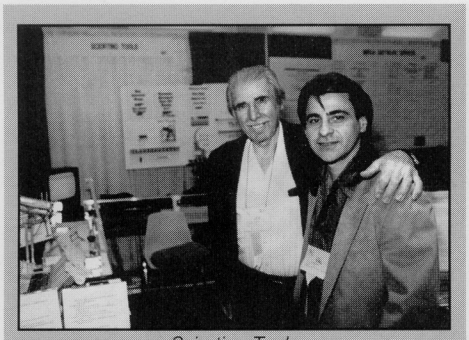
Carl Sauter Pianofortemanufaktur
Spaichingen, Germany

Schafer Brothers Piano Movers
Carson, CA

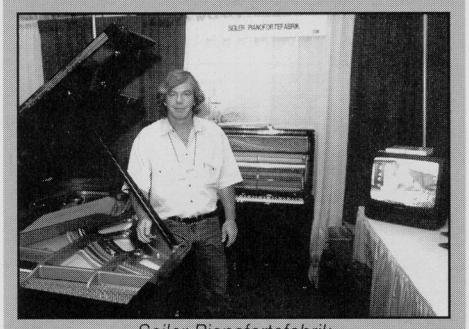
Schaff Piano Supply Co.
Lake Zurich, IL

Schimmel Piano
Lititz, PA

One Last Look

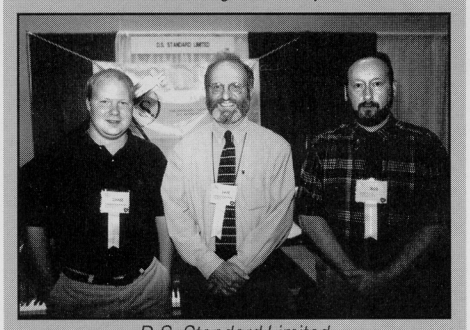


Sciortino Tools
Greenlawn, NY

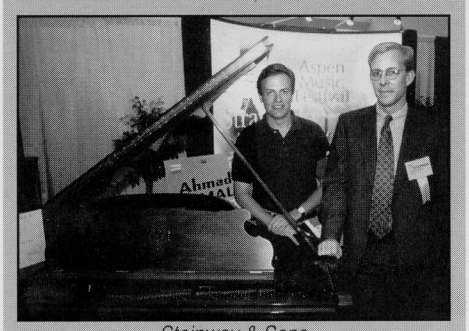


Seiler Pianofortefabrik
Kitzingen, Germany

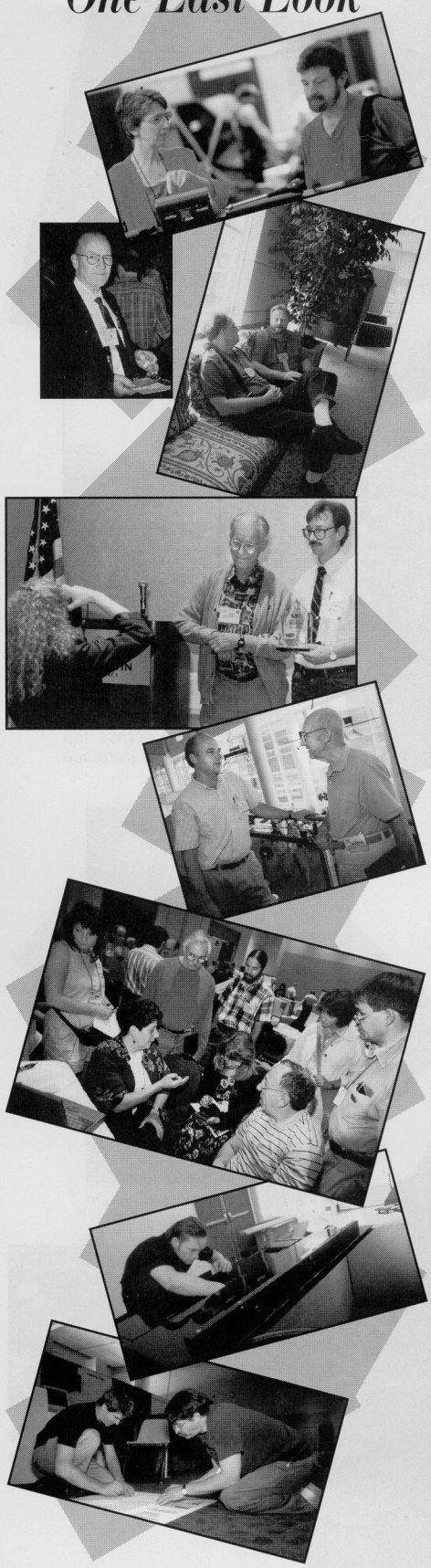
Wilh. Steinberg AG
Eisenberg, Germany



D.S. Standard Limited
Titusville, PA

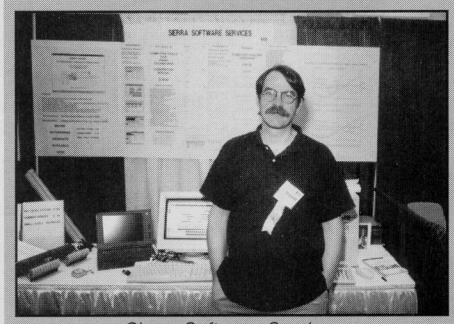


Steinway & Sons
Long Island City, NY



Top from left, Zen Reinhardt and Steve Pearson; James Coleman, Sr.; Christopher Robinson and Shawn Hoar; Martha Reyburn, Bob Carbaugh and Dean Reyburn; George Husted and Matt Guggenheim; Jeannie Grassi leads a Cyber Cafe Class; Norbert Altmeyer of Wilh. Steinberg AG; and Glenway Fripp and Tremaine Parson of Sierra Software.

Story & Clark Pianos
Seneca, PA



Sierra Software Services
Georgetown, CA

Walter Piano Company, Inc.
Elkhart, IN

Yamaha Corporation of America
Buena Park, CA

Young Chang
Lakewood, WA

Congratulations to Our 25- & 35-Year Members

35 Year Members

Berge Kalajian, RPT
Bayville, NJ

Joseph Sciortino, RPT
Copiague, L.I. NY

James R. Wells, RPT
Hayden, AL

Roger H. Weisensteiner, RPT
West Baden, IN

Richard Doerfler, RPT
Toledo, OH

Walter Haedrich, RPT
Moline, IL

Richard Hassig, RPT
Davenport, IA

Julius J. Konopka Jr., RPT
Bridgeton, MO

John B. Sanders, RPT
Austin, TX

W. Dean Baker, RPT
Odessa, TX

Howard J. McQuigg, RPT
Monrovia, CA

James G. Bryant, RPT
Sacramento, CA

Paul R. Magee, RPT
Carmichael, CA

Wayne O. Mutley, RPT
Enumclaw, WA

Evan Giller, RPT
New York, NY

John M. Guttmann, RPT
Yonkers, NY

Gary H. Schultz, RPT
Woodbury, NY

Eli Lee Dobrins, RPT
Dix Hills, NY

James M. Kranendonk, RPT
Clifton Park, NY

Camille R. Morin Jr. RPT
Scotia, NY

Daniel M. Hallett Jr. RPT
Meadville, PA

William H. Keller, RPT
Phoenixville, PA

Michael H. Bowser, RPT
Silver Spring, MD

Frederick C. Bath, RPT
Baltimore, MD

Cecil R. Hutching, RPT
Staunton, VA

Alger Batts Sr. RPT
Richmond, VA

John Pelick Jr. RPT
Jacksonville, FL

Howard S. Rosen, RPT
Boynton Beach, FL

Robert M. Joynes, RPT
Hudson, FL

Frank P. Vance, RPT
Riverview, FL

Oscar L. Kirkland, RPT
Concord, TN

Cecil A. Culbreth, RPT
Cordova, TN

Sanford G. Whetherholt, RPT
Memphis, TN

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Ferndale, MI

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Toledo, OH

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Okemos, MI

Paul R. Schoelles, RPT
Midland, MI

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Grand Rapids, MI

Burtis L. Burow, RPT
Waterloo, IA

Vernon D. Hunstad, RPT
Cedar Rapids, IA

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Shorewood, WI

Matthew Wrensch, RPT
Wauwatosa, WI

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Eden Prairie, MN

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St. Louis Park, MN

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Henderson, NV

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Reno, NV

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Abilene, TX

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Upland, CA

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San Dimas, CA

Randall C. Woltz, RPT
Tustin, CA

Susan E. Graham, RPT
Grand Cayman

Edward L. Solenberger, RPT
Santa Rosa, CA

Richard Des Wilson, RPT
Scotts Valley, CA

Robert E. Davis, RPT
Stockton, CA

Irvin A. Klaschus, RPT
Turlock, CA

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Stephen L. McCann, RPT
Westbank, BC

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Danvers, MA

George F. Emerson, RPT
Haverhill, MA

Walter J. Woitasek, RPT
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Nacogdoches, TX

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Baytown, TX

Ron Evans, RPT
Corpus Christi, TX

Max D. Dixon, RPT
Golden, CO

Don C. Tew, RPT
Idaho Falls, ID

Cyrus L. Welch, RPT
Citrus Heights, CA

Donald L. Mitchell, RPT
Vancouver, WA

Douglas R. Smith, RPT
Salem, OR

Theodore R. Sipkowski, RPT
Walton, OR

Stephen H. Brady, RPT
Seattle, WA

Elisha M. Gullixson, RPT
Issaquah, WA

Wayne N. Nitteberg, RPT
Seattle, WA

Irvin E. Griffith, RPT
Eagle River, AK

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RPT Class of 1998

Laurence J. Beach, RPT
Vancouver, BC

John J. Campbell, RPT
Phoenixville, PA

Wallace F. Wilson, RPT
Ravenswood, WV

Herman E. Jenkins, RPT
Mounds, OK

Eddie M. Jauod, RPT
Burnaby, BC

Edmund F. Piotrowski III, RPT
Hopewell, NJ

Marilyn A. Eble, RPT
Westlake, OH

John A. Goode, RPT
McAllen, TX

Bob B. Steel, RPT
N. Vancouver, BC

Arthur T. Burge, RPT
Olney, MD

David J. Ireland, RPT
Mansfield, OH

Robert R. Mendenhall, RPT
Houston, TX

Matthew D. Dudgeon, RPT
Teuksbury, MA

David M. Long, RPT
Crofton, MD

Keith M. Hamilton, RPT
Youngstown, OH

Robin L. Campbell, RPT
Austin, TX

Andrew J. Pettey, RPT
Taunton, MA

Raymond A. Breakall, RPT
Chester, VA

Sally R. Lindsley, RPT
Ft. Wright, KY

Ricki Klos, RPT
Austin, TX

Ivan Svenda, RPT
Winnipeg, MB

Kevin C. Shipe, RPT
Spotsylvania, VA

Jonathan J. Ralinovsky, RPT
Yellow Springs, OH

Daniel M. Roe, RPT
Boulder, CO

Francis D. Dube, RPT
Sudbury, ON

David G. Feeny, RPT
Greensboro, NC

Keith J. Barney, RPT
Sarnia, ON

Eldridge J. Travis, RPT
Payson, UT

Kristopher Kunze, RPT
Toronto, ON

William J. Huesman, RPT
Winston-Salem, NC

Mayer Gluzman, RPT
W. Bloomfield, MI

Alice M. Miles, RPT
Phoenix, AZ

Raymond C. Nilson, RPT
Seymour, CT

Alicia R. Shumate, RPT
Charlotte, NC

Dennis A. Penney, RPT
Royal Oak, MI

Tom C. Mancillas, RPT
Hollywood, CA

Linda Castronovo, RPT
Palisades Park, NJ

Charles H. Cook, RPT
Griffin, GA

Elizabeth A. Baker , RPT
Belgrade, MT

Jim Ogden, RPT
La Canada, CA

Thomas J. Castronovo, RPT
Rivervale, NJ

Panos Ioannidis, RPT
Thessaloniki

Donald F. Bee, RPT
Park Forest, IL

Robert E. Peters Jr. RPT
San Diego, CA

David E. Thomson , RPT
Chatham, NJ

Timothy P. Hollis, RPT
Panama City, FL

T. David Gordon, RPT
Elgin, IL

Richard A. Cabe, RPT
Huntington Beach, CA

Daniel T. Franklin, RPT
New York, NY

Gregory A. Pollard, R
Niceville, F

nry S. Kopek, RPT
Bolingbrook, IL

Hilary B. Strain, RPT
Palo Alto, CA

Rocco Garofalo, RPT
Franklin Square, NY

Michael T. Tille RPT
Fairhope, A

atricia A. Ludden, RPT
Crete, IL

Jana L. Hyder, RPT
Bend, OR

Keith T. Hurrell, RPT
Rockville Center, NY

Robert C. Horton, RPT
Clearwater, FL

K. Richard Banning, RPT
Overland Park, KS

Dan D. McClung, RPT
Bend, OR

Graham J. Howes, RPT
Hamburg, NY

Glenn W. Suyker, RPT
Gulfport, FL

Daryl S. Durand, RPT
Kansas City, MO

Jeffrey R. Moore, RPT
Portland, OR

Cynthia Crombach, RPT
Rochester, NY

Marcia L. Ramsey, RPT
Oak Ridge, TN

David A. Vanderhoofven, RPT
Joplin, MO

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Daniel A. Alberts, RPT
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Thomas E. Malone, RPT
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Kenneth A. Zahringer, RPT
Columbia, MO

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Lexington , KY

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Hays, KS

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Bellingham, WA

Roger C. Hayden, RPT
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Huntington, WV

Benjamin J. Davis, RPT
Luther, OK

Mariko Kondo, RPT
Tacoma, WA

The Above Nàmed Members of the Piano Technicians Guild Attained Their RPT Status During the Past Year, Since the 1997 Convention in Orlando Through the Providence Convention This Past July.

Foundation Focus

Hurry, Hurry, Hurry — Read All About It!

Because typically that above statement is how many of our lives are patterned, I felt it my responsibility to ask you to stop and to consider smelling the roses and reading *The Memories of Kelly Ward.* I personally am not a reader, nor do I normally have time in my schedule to read because of all the other commitments, but at this year's PTG Convention in Providence, R.I., I had an opportunity to talk briefly with Elizabeth "Liz" Ward about the book that we were displaying in the PTG Foundation booth. I bought a copy – not only to support the book and Kelly, but the fact that a portion of the proceeds from that book go back to the Foundation. Wow! what a pleasant surprise. As I got into *The Memories of Kelly Ward* and the stories he tells I was glued to the book.

Kelly Ward and I go back a long time, not only as Craftsmen members of our PTG organization, but also in our friendship and business relations – he was a Kimball dealer. Kelly is past president of the guild, 1973 - 75, and the 1977 Hall of Fame recipient.

I encourage you to contact the PTG Home Office and purchase a copy of the book and learn about the exciting life of Kelly Ward.

— Roger H. Weisensteiner, RPT
PTGF Director Emeritus

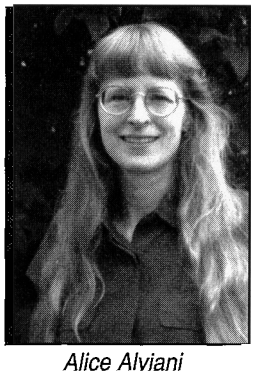
Dear PTG and PTGF

Thank you again for the convention scholarship. I really learned a lot. I've noticed an interesting (and unexpected) change in myself since passing my technical exam; I feel more confident and serene. I now read the *Journal* more for the love of learning than feeling like I "must study." I honestly didn't realize how that exam had been prying on my mind!

Anyway, as out friend Elberth Overboe, RPT, said, "One more infusion to go, and I'll be one of you!" It somehow lacks in writing without a Transylvanian accent.

Thanks again.

— Alice Alviani



Alice Alviani

PTGF

The PTG Foundation Needs Your Help!

The history of PTG and its predecessors is in danger of being lost. As part of its mission, the PTG Foundation has taken on the task of preserving that history.

The work of collecting, organizing and preserving our past must be an ongoing part of our present. Your donation of money or historical materials will allow us to continue this important work. You may also designate the PTG Foundation as the beneficiary of your PTG death benefit. Contact the Home Office for details.

Honor a mentor, friend or associate, either living or deceased, with a tax-deductible contribution. Three contribution levels have been established:

- Patron ($100 or more)
- Contributor ($50-$99)
- Supporter ($35)

To make a contribution, or for more information, contact:

PTG Foundation
3930 Washington
Kansas City, MO 64111
(816) 753-7747

CALENDAR of EVENTS

October 9-11, 1998

OHIO STATE CONFERENCE
Location: Graves Piano & Organ
in Cleveland, OH
Contact: Mike Masters (216) 228-2208
1636 Warren Road, Lakewood, OH 44107

October 15-18, 1998

TEXAS STATE ASSOCIATION
Marriott-Greenspoint Area
Contact: Roy Escobar (281)745-0231
2710 Durban, Houston, TX 77043

October 17, 1998

NYSCON
Holiday Inn, Plainview, NY
Contact: Michael Slavin (516) 781-8888
2409 Wood Ave, Bellmore, NY 11710

October 22-25, 1998

NORTH CAROLINA REGIONAL CONFERENCE
Holiday Inn Select, Richmond, VA
Contact: Alan Hallmark (804) 346-8068
email: pianomanadventures@erds.com
Or Contact: Lewis Spivey (252)937-4777
5041 Rachel Dr., Nashville, NC 27856

February 12-14, 1999

CALIFORNIA STATE CONVENTION
Hyatt Regency, Long Beach, CA
Contact: Peg Browne (714)530-4768
11511 Wasco, Garden Grove, CA 92841

April 8-10, 1999

PACIFIC NW REGIONAL CONFERENCE
Provo Park Hotel
Contact: Vince Mrykalo (801)378-3400
694 North 100 East, Provo, UT 84606

April 23 - 24, 1999

FLORIDA STATE SEMINAR
Ft. Lauderdale Marriot
Contact: Mark Shapiro (561)451-2136
23360B S.W. 53 Ave., Boca Raton, FL 33433

April 30 - May 2, 1999

NEECSO / New England Eastern Canada Seminar
Hotel Gouvernears, Quebec
Contact: Isabelle Gagnon (418)822-3550
6769 Royale, L'Ange - Gardien, QC G0A 2K0

All seminars, conferences, conventions and events listed here are approved PTG activities. Chapters and regions wishing to have their function listed must complete a seminar request form. To obtain one of these forms, contact the PTG Home Office or your Regional Vice President.

Once approval is given and your request form reaches the Home Office, your event will be listed six-months prior and each issue until the month in which it is to take place.

Deadline to be included in the Events Calendar is at least 45 days before the publication date; however once the request is approved, it will automatically be included in the next available issue.

Associates Make The Grade in August

REGION 1

118 Long Island-Cristofori, NY

Keith T. Hurrell
61 State Street
Rockville Center, NY 11570

REGION 2

379 Knoxville, TN

Marcia L. Ramsey
134 Lancaster Road
Oak Ridge, TN 37830

REGION 4

445 Youngstown, OH

Keith M. Hamilton
8015 Forest Lake Drive
Youngstown, OH 44512

481 Detroit-Windsor, MI

Keith J. Barney
657 Rayburne Avenue
Sarnia ON N7T 7A7
Canada

601 Chicago, IL

Patricia A. Ludden
809 St. Andrews Drive
Crete, IL 60417

REGION 7

594 Montana

Elizabeth A. Baker
30 Reinig Street
Belgrade, MT 59714

846 Utah Valley

Eldridge J. Travis
5581 W. 8400 S.
Payson, UT 84651

972 Portland, OR

Richard K. Wheeler
1928 Se Washington Street
Milwaukie, OR 97222

981 Seattle, WA

Suktae Hyun
11703 Grove Drive
Mukilteo, WA 98275

NEW MEMBERS
In August

REGION 1

064 Connecticut

Robert S.Marullo
11 Relay Place
Cos Cob, CT 06807

REGION 2

212 Baltimore, MD

Robert Thomas
Rd 1, Box 487
Ellendale, DE 19904

REGION 3

871 New Mexico

Annabelle M. Linhart
212 Proto Avenue
Socorro, NM 87801

752 Dallas, TX

Lee Sang Cheoll
17711 Knoll Meadow
Dallas, TX 75287

REGION 4

601 Chicago, IL

Ronald R. Zahora
9770 Grant Place
Crown Point, IN 46307

REGION 5

511 Siouxland, IA

Melissa A. Dinesen
1347 Road M36
Harlan, IA 51537

553 Twin Cities, MN

Bruce M. Hagen
17414 Jaguar Path
Lakerville, MN 55044

641 Kansas City, MO

David D. Hall
34 Misty Springs Circle
Platte City, MO 64079

REGION 6

951 Santa Clara Valley, CA

Jeffrey C. Williams
952 2540 Marsha Way
San Jose, CA 95125

REGION 7

012 Vancouver Island, BC

Alan W. Lehmann
4708 Mcconnell Avenue
Terrace, BC V8G 2G8
Canada

846 Utah Valley

Eldridge J. Travis
5581 W. 8400 S.
Payson, UT 84651

Passages

Paul Ruhenbeck
July 12, 1913 - February 12, 1998

Cofounder of the New Jersey chapter of PTG and tuner-technician of seven decades, Paul Ruhenbeck, 84, died on February 12, 1998, from complications of severe burns which he suffered as a result of an accident at his shop a few days earlier. Paul Ruhenbeck, born July 12, 1913, devoted his life to the study and practice of piano technology. His father, William, trained Paul in the Ruhenbeck Piano Factory that produced the Ruhenbeck upright piano. William then sold the company to pursue a position at the Chickering factory in Boston and Paul went out on his own to begin a long, successful career caring for pianos as well as harpsichords and pianofortes. Remaining at the family home until his death, Paul worked in the shop building behind the house that his father had built.

During his career he prepared instruments for concerts by Mischa Dichter, Van Cliburn and Andre Watts. But Paul spent most of his time working on pianos for average people and he loved doing it. Paul loved talking about pianos, thinking about pianos and working on pianos of all kinds from the finest concert grand Steinway to the lowly bottom of the barrel spinet. He loved having the opportunity to make a piano play at it's best. Paul loved the piano, and I think he remembered every piano he ever laid eyes on. He could recite serial numbers of pianos that he worked on 20 years ago. He would tell you what to look out for if you should work on that Chickering grand 87493 that he worked on in 1971. His was a unique life of single mindedness and dedication that can be an example and an inspiration for all of us. Farewell, old friend, we shall miss you.

—Bob Dowling, RPT

Mail Bringing PTGA News

Phyllis Tremper
PTGA President

Please watch your mailboxes for interesting news from our newsletter editor. It will be coming soon if you have not received it yet. At the Council meeting, we decided to go back to at least one newsletter a year for those of you who weren't able to attend convention. It will contain the minutes of all meetings and hopefully a copy of our newly passed bylaws. Please save these as we will be hard pressed to spend that much money again to reach all of you.

The Council meeting on Thursday, July 9, 1998, went very well, considering that I was fighting some sort of malady which I had never experienced before. Most of the items were passed; however, there are a few little details that we must attend to next year at Council to clear up a point or two.

So, as you read the bylaws in the comfort of your own home and not under pressure, please make a note or two and drop it to Evelyn Ternstrom, our new Recording Secretary, who is still going to chair the final edition of our bylaws. Again, please let me reiterate what a fine job she and her committee did on those revisions. They spent many hours of their free time in making it all happen on time.

I also want to thank all of you members who remembered me with souvenirs from the tour when I was too sick to go with you. I believe it was the first tour I have missed in 16 years. But the book and the video really helped me believe that I was right there with you. I am so happy that it was a big success. See Evelyn's coverage of the tour on this page.

I'd love to hear from any or all of you during the year. A quick note or post card or e-mail will help bring us all together. Any constructive ideas are always welcome. Have a wonderful Fall Season and don't forget to "Put a Little Music in Your Life."

— Phyllis K. Tremper
PTGA President

PS — Thank you Brenda Hallmark for your fine article in our pages. Everybody please remember the North Carolina Regional Conference, and please attend if you can, it sounds like a great program.

AUXILIARY exchange

DEDICATED TO AUXILIARY NEWS AND INTERESTS

PTGA President Phyllis Tremper addresses the Opening Assembly, above. At left, the 1998-99 PTGA Board of Directors are, front row from left Vice President Diane Hennesy and President Phyllis Tremper, second row from left, Corresponding Secretary Beva Jean Wisenbaker, Recording Secretary Evelyn Ternstrom and Treasurer Marilyn Raudenbush

PTG Secretary-Treasurer Gracie Wagoner, above center, won the PTGA Rose Recital Afghan Raffle to aid the Auxiliary Scholarship Fund. Gracie is flanked by Beva Jean Wisenbaker, who knitted the afghan, and her husband, Martin.

Linda Hansen, Porterville, CA, from left, Joy Fruge, Lake Charles, LA, Britt Western Huser, Norway, Margaret Kurta, Mackinaw City, MI, and Diana Fontaine, Orange, MA, meet with PTGA Phyllis Tremper, second from right, prior to the PTGA Tour.

As his mother, Victoria Grayson, looks on, Anthony Green, Providence, RI, warms up for the PTGA Scholarship Recital sponsored by Baldwin. The 13-year-old has been studying classical piano since he was five.

The Day We Visited a "Summer Cottage"

By Evelyn Ternstrom
Recording Secretary

Auxiliary members attending the Annual Convention boarded the tour bus or van bound for Newport on July 10, 1998. Excellent tour guides provided a running commentary filled with facts and humor.

Rhode Island, a small state, has 400 miles of coastline. Roger Williams started the settlement of Providence in opposition to the religious intolerance of the Puritans in Massachusetts. In 1638 he established the first Baptist Church in America. Newport was founded on the Isle of Rhodes and the colony became Rhode Island and Providence Plantations, which is still the state's name. Rhode Island's State House has the fourth largest self-supported marble dome in the world. We passed the Hasbro Children's Hospital, a facility made possible by a major financial gift from the Rhode Island-based toy manufacturer.

Newport is the fabled resort of America's Cup yacht racing and magnificent mansions. We were surprised to learn Farewell Street, with its cemetery graves on both sides of the street, was named after a person named Farewell. Newport, one of the most strategic ports on the East Coast, was the original site of the Naval War College. The city is also home of the International Tennis Hall of Fame and Museum.

Reflecting the religious diversity of the first residents, Newport is the home of the Friends Meeting House, one of the oldest religious structures in the city. Touro Synagogue, built in 1763, is the oldest synagogue in the United Sates. St. Mary's Church, the oldest Roman Catholic parish in Rhode Island, is where Jacqueline Bouvier and John F. Kennedy were married in 1953.

Bellevue Avenue is lined with many mansions. We were fascinated with our visit to the Marble Mansion. Mr. and Mrs. William K. Vanderbilt had this "summer cottage" constructed between 1888 and 1892. William Vanderbilt's grandfather, Commodore Cornelius Vanderbilt, established the family's fortune in steamships and the New York Central Railroad.

The Marble Mansion contains 500,000 cubic feet of various types of marble. The interior is ornately furnished with the Louis XIV period of Versailles predominating. A Chinese Tea House was added on the seaside cliffs as a way for Mrs. Vanderbilt to outdo her neighbors. The teahouse was used for smaller scale entertaining and women's suffrage rallies. Today concerts are performed on the mansion's grand piano. The Mansion includes a Harold S. Vanderbilt Memorial Room, featuring yachting trophies and memorabilia.

After lunch at Christie's Restaurant, there was time for shopping and a tour along Ocean Drive before returning to Providence. We passed other mansions and historic sites, including Hammers-mith Farm, Jackie Kennedy's childhood home and the setting for her wedding reception.

With interest kindled in Newport, Ray and I returned after the convention and took the 3.5-mile cliff walk overlooking the Atlantic Ocean. This gave us a view of the ocean side of the mansions. Next year be sure to look for the convention tour opportunities. Sign up early and join the fun! It's a good opportunity to form new friendships.

Wisdom of the Ages

Age 5 ..... I learned that you can't hide a piece of broccoli in a glass of milk.
Age 10 .... I learned that when I wave to people in the country, they stop what they're doing and wave back.
Age 15 .... I learned that although it's hard to admit it, I'm secretly glad my parents are strict with me.
Age 20 .... I learned that if someone says something unkind about me, I must live so that no one will believe it.
Age 25 .... I learned that if you want to cheer yourself up, you should try cheering someone else up.
Age 30 .... I learned that children and grandparents are natural allies.
Age 35 .... I learned that you can make someone's day by simply sending them a little card.
Age 40 .... I learned that the greater a person's sense of guilt, the greater his need to cast blame on others.
Age 45 .... I learned that making a living is not the same as making a life.
Age 50 .... I learned that you shouldn't go through life with a catcher's mitt on both hands; you need to be able to throw something back.
Age 55 .... I learned that whenever I decide something with kindness, I usually make the right decision.
Age 60 .... I learned that when I have pains it doesn't mean I have to be one.

*"It is far better to have good memories than a good memory. Too many people who pride themselves on their good memory remember things that were best forgotten." — **Sidney Harris***

Making It Right —

Corrections to the 1998 PTG Directory/Source Book

Robert Alechnowicz
203-934-8427

Albert Anderson, RPT
One Riverplace Drive, #109
La Crosse, WI 54601
608-782-5143

Douglas Atkinson
737 Wilmington Avenue, #6
Dayton, OH 45420
937-294-9515

Peter Briant
Does not have e-mail

Paul Brown, RPT
paulbrn@rogers.wave.ca

Donald Bulla
134 Rollingreen Road
Greenville, SC 29615
864-244-5987

Gary Doudna, RPT
csgkd@eiu.edu

Richard H. Elrod
10007 Woodland Bend Cove
Lakeland, TN 38002-3964
901-266-0378

Yves Feder
y.a.feder@tinyradio.com
http://www.geocities.com/paris/1769

Richard Friedman, RPT
Box 116
Dryden, NY 13053
607-844-8504

Dennis Haas
616-496-7723

James N. Hess, RPT
200 W. Allen St.
Mechanicsburg, PA 17055
717-697-4111
hesspiano@juno.com

Patrick Ingoldsby
5200 Sioux Lane
Austin, TX 78734
512-266-7122

Linda Kay
510-653-1616

Jack Krasner
jbkras@pwrtc.com

Eddie Kupenda
P. O. Box 16118
Asheville, NC 28816
704-253-2709
PIANO2NR@MINDSPRING.COM
Region 2 Chapter 296

Lawrence Liddell
ldhliddell@aol.com

Patricia Ludden, RPT
708-672-7346

Ruth McCall
rhmccall@juno.com

Robin Pierson
pierson@mhtc.net

Bob Russell, RPT
440-449-5212

Robert L. Scott
734-434-5290
http://www.wwnet.net/~rscott

Robert Thomas
P. O. Box 10692
Blacksburg, VA 24062
540-961-3740

Michael Wood
2722 Hillcrest Road
Richmond, VA 23225
804-233-5954

Matthew Wrensch
MW440@juno.com

John Young, RPT
tajmahal@together.net

Getting in Touch with the PTG Home Office Staff Just Got Easier

Each Member of the Home Office Staff Now has a Direct E-mail Address to Better Serve You

- ptg@unicom.net
  General E-mail to the PTG Home Office, or Jerri Dowdy, Assistant to the Executive Director
- hanzlick@unicom.net
  David Hanzlick, Executive Director
- sroady@unicom.net
  Sandy Roady, Director of Member Services
- msheldon@unicom.net
  Midge Sheldon, Advertising/Merchandising Coord.
- joezeman@unicom.net
  Joe Zeman, Director of Communications
- cwilane@unicom.net
  Catherine Wilane, Director of Finance/Administration

Mark Your Calendars

Now is the time to start planning for the 1999 PTG Convention & Technical Institute.

July 21-25, 1999

in the Kansas City Hyatt Regency

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SERVICE BUSINESS FOR SALE— Family circumstances necessitate my move to East Coast January 1999. I want to sell business in Ventura, California's desirable Central Coast, to RPT with 15 years combined in-home, concert and light rebuilding experience. Annual gross over $80,000 with 1500 clients in 25-mile radius. Ready to move out of cold weather or urban sprawl? Mediterranean climate, relatively uncrowded, reasonable cost of living, and flourishing music scene. Initial down payment plus scheduled payments. Contact Anthony Pascone, RPT (805)658-8800, Fax (805)642-6430, or e-mail at cbapascone@aol.com

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SOUNDBOARDS, PINBLOCK MATERIAL AND TUNING PIN DRILL BITS NOW AVAILABLE FROM GENEVA INTERNATIONAL! Geneva International Corporation, exclusive U.S. distributors of Petrof and Weinbach pianos, is pleased to announce the availability of European spruce soundboard blanks, 7 ply quarter-sawn beech pinblock material, select hard maple Marion plywood pinblocks and 6 1/4" fast spiral helix drill bits. Get the best material at the best price! Call Alan Vincent at 1-800-533-2388 for pricing and more information.

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*Mehlin & Sons, 1924, 9' Ebony Satin, $7,500; *Knabe 6'4" Walnut, $4,500; *Knabe 5'8" Ebony, $3,900; *Knabe 9' Ebony $5,000;*Howard/Baldwin 5'7" Ebony Gloss, 1994, $6,995; *Baldwin/Howard, W/Pianodisc & Orchestra, $9,995; *Schimmel, 6'9" 1976, Ebony Satin, $14,900; *Yamaha C-3, Ebony Satin, 6'1", 1981, $12,500; *Baldwin 6'3", Ebony Satin, $9,995; *Baldwin 7', Ebony gloss w/Pianocorder, $14,000; *Fisher Grand, 5'4" 1915 Circasian Walnut, $4,895; *Kimball 4' 10" Frch. Provincial $4,900; *Mason & Hamlin "BB" Mahogany, $36,000; *Chickering & Sons 5'8" Mahogoany, Ivory Keys, $4,000; *Chickering & sons 5'4" Mahogany, $4,995; *Schafer & Sons 6'9" Gulbransen Midi Unit & Speaker, $7,495; *Schafer & Sons 5'1" Walnut Gloss, $4,500; *Wegman "Petite" Frch. Prov., Rich Walnut, $3,995; *Wurlitzer "Petite" Frch. Prov., Bookmatched Finish Walnut, $4,195; *"Howard" Built by Kawai, Ebony Satin Wonderful Tone, 5'10", $7,700; *Technics Midi Piano, Touch Sensitive and More! $2,495. Call SCHROEDER'S PIANOS Since 1957 for a complete list of used pianos, 800-57 PIANO Visit our web page: 57 piano.com

FOR SALE—Replacement Reeds wanted for use in Parlor Reed Organs. Direct inquiries to: Paul Toelken-supplier, PO Box 25017, Prescott Valley, AZ 86312, (520)772-8914. ptoelken@northlink.com

IVORY KEY TOPS. Pre-ban ivory cut to your specs. for keyboards. Most sets are $500. U.S. customers only. Warther Museum, 1387 Old Road, Sugarcreek, Ohio 44681. 330-852-3455.

FOR SALE—1883 7'4" Chickering Grand. Handcarved Brazilian Rosewood. Original Ivory, restoried and fully playable. Piano presently located at the Piano Parlor, Spokane, WA (509)482-7857. Call 800-484-4367 ext. 9122 or 541-412-3145 . Appraised at 35k.

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STRAIGHT SIDES AND SQUARE FRONTS are the benchmarks of our quality key recovering, $150/set tops and fronts. Plastic sharps installed $90/set, key bushing using Spurlock precision cauls $100/set. Shipping charges are additional. Key repairs, buttons, and other services available. Visa and M/C accepted. E-mail: ashmore@gv.net, call 530-273-8800. Yvonne Ashmore, RPT and C. Christensen, Keyboard Restorations, 12700 La Barr Meadows Road, Grass Valley, CA 95949.

STEINWAY Action Frame Rails Resoldered, Replaced, and/or Repositioned. For price list write or call John Dewey Enterprises, Inc; 861 E. 2900 North Road, Penfield, IL 61862-9603, phone (217)595-5535.

PLAYER PIANOS REBUILT BOUGHT & SOLD. Will pick up system and re-install from GA to CONN. or send in mail. Nicholas Fiscina 1-800-862-2138.

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See our ad on page 3.

VIDEOS

INSTRUCTIONAL VIDEO TAPES. Victor A. Benvenuto. Piano tuning, $50.00*; Grand Regulating, $50.00*; Grand Rebuilding, $100.00 (2)*; Key Making, $50.00*; Soundboard Replacement, $29.95*. (*Plus S/H). The Piano Shoppe, Inc., 6825 Germantown Avenue, Philadelphia, PA 19119-2113; Ph. 215-438-7038, Fax, 215-848-7426

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WANTED: DOLMETSCH-CHICKERING Harpsichord by Michael W. Hart, PO Box 268, Corbin, KY 40702 (606)528-8760.

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PIANOS! PIANOS! PIANOS! !!!Free phone appraisal!!! Buying all types of usable pianos. Cash or bank check on pick up. Won't hesitate on price. Call us first for fast professional service. "Steinway, Mason-Hamlin command specialty prices." Jay-Mart Wholesale, P.O. Box 21148, Cleveland, OH 44121. Call Irv Jacoby 1-800-411-2363, or collect 216-382-7600/FAX 216-382-3249.

WANTED: TINY PIANOS such as the Wurlitzer Student Butterfly or other small types. No more than 50 keys. Call toll-free: Doug Taylor, 1-888-895-6211. I'll pay shipping!

WANTED: Very old Chickering Grands pre-1900 to restore. Also, very old square pianos. PTG member, technician would appreciate your referals. Contact Michael W. Hart, P.O. Box 268, Corbin, KY 40702 (606) 528-8760.

DISPLAY AD INDEX

WANTED:

Companies and Manufacturers to be listed in the 1999 *"Guide To Resources In Piano Technology."*

The *Guide* will be published with the PTG Membership Directory and binded into one "Reference Book."

For information on Advertising and being listed in the "*Guide,*" contact the Home Office at 816-753-7747 or write to us at: 3930 Washington, Kansas City, MO 64111, fax: 816-531-0070 and request your packet today.

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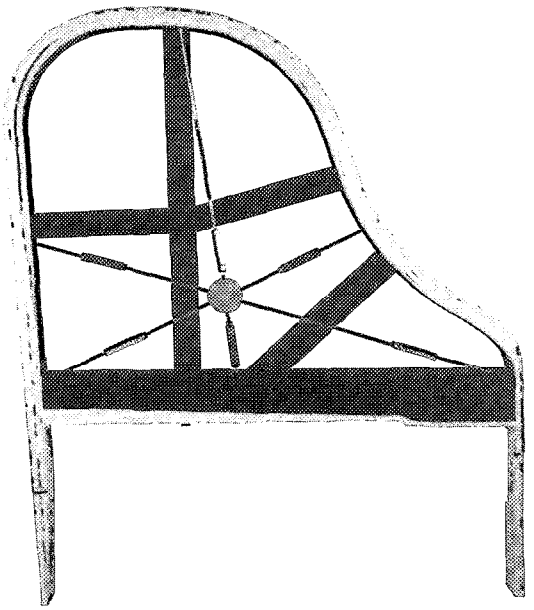

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TECH GAZETTE
YAMAHA
October 1998

New Look... Even Greater Information

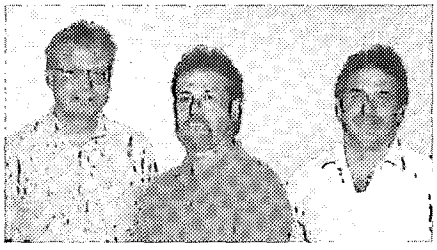
Tech Gazette not only carries a new look, but editorial content beginning next month will supply even more valuable information.

The writers of future articles are the members of the Yamaha Piano Service Technical Team. Each monthly article will be written by a different staff member and provide information on how to solve a variety of challenges.

Articles will discuss the servicing of Yamaha pianos, how to deal with tough customers and those unique challenging service situations. The articles will include technical and anecdotal information to help you better serve those customers who own Yamaha pianos. The Yamaha Piano Service Technical Team consists of:

Yamaha Piano Service Staff.

In our corporate offices in Buena Park, we have Terry Niimi, Piano Technical Manager; Bill Brandom, National Piano Service Manager; Greg Frank, Mark Wisner and Steve Pearson, Application Specialists, and located in New York City is Hiro Mizuno, Concert Service Specialist for Yamaha Artist Services. This group of individuals has a vast warehouse of experiences to share.



From left to right are Greg Frank, Steve Pearson and Mark Wisner.

Yamaha Piano Service Consultants.

Comprised of eight individuals, the Piano Service Consultants are the "experts" in the field. They are selected by Yamaha, and in certain service situations are brought in to ensure that our customers are happy with their pianos. In addition to the hands-on technical demands, they assist Yamaha with teaching at seminars across the country and working one-on-one with fellow technicians. Our Piano Service Consultants are: LaRoy Edwards, Richard Davenport, Craig Fehrenbacher, Ernie Juhn, Mark Hullibarger, Tom Kaplan, Greg Rohrabaugh and Bob Shoffner. Collectively, this elite group has well over 150 years of technical experience. We feel that they can pass on to the readership valuable and timely information.

The picture below was taken during a two-day piano Service Consultant meeting held in Buena Park, CA on April 23 and 24. Subjects covered in the meeting included servicing the new Yamaha Disklavier PRO, performing Disklavier MarkII to Mark IIXG upgrades, and voicing the Yamaha CFIIIS concert grand piano.

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From left to right are Ernie Juhn, LaRoy Edwards, Craig Fehrenbacher, Tom Kaplan, Hiro Mizumo, Greg Rohrabaugh, Richard Davenport, Bob Shoffner, Mark Hullibarger, Bill Brandom and Terry Niimi.