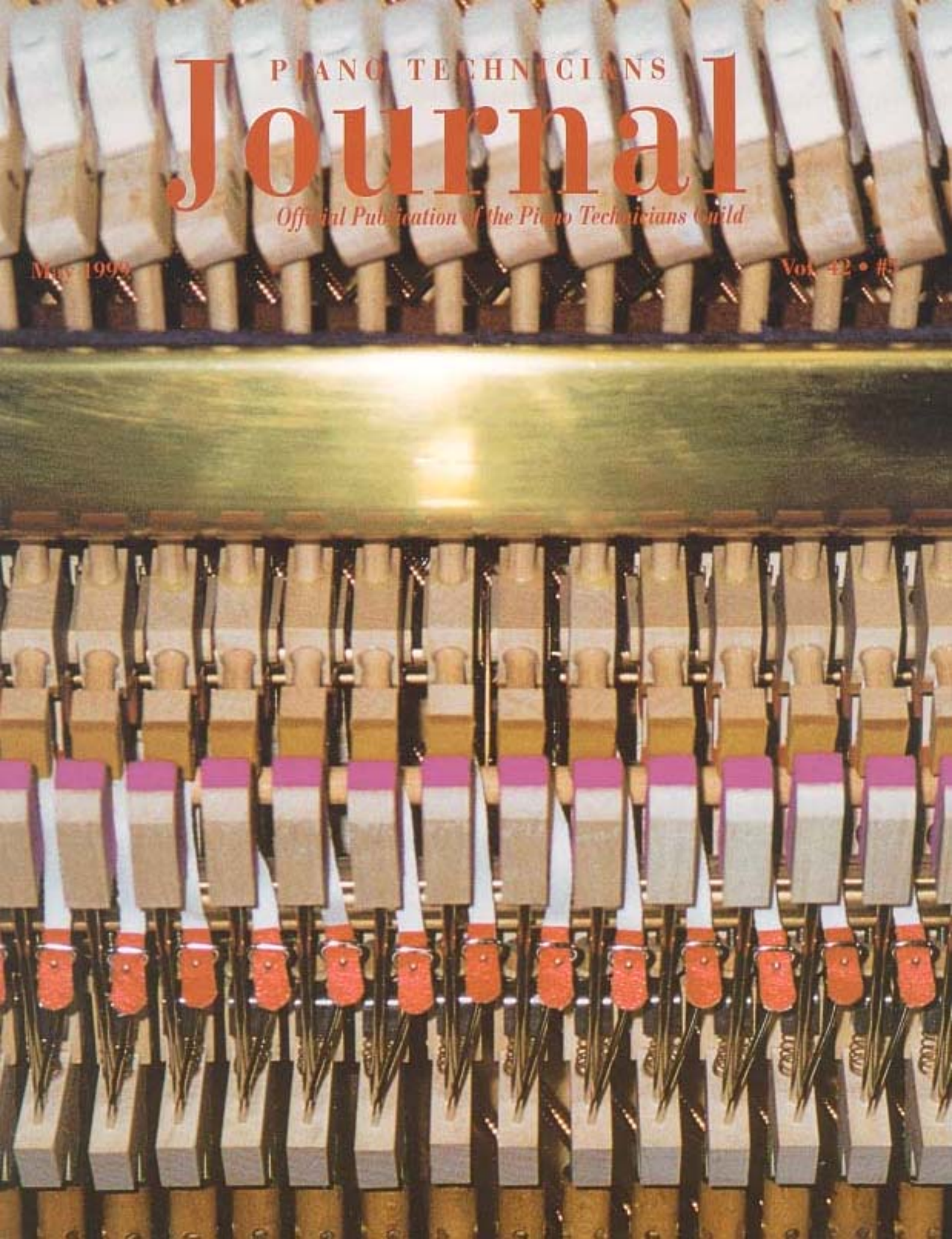

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Official Publication of the Piano Technicians Guild

May 1998 Vol. 42 • #5

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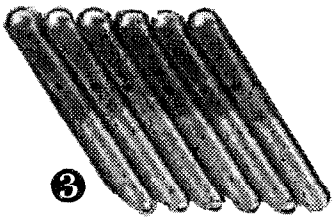

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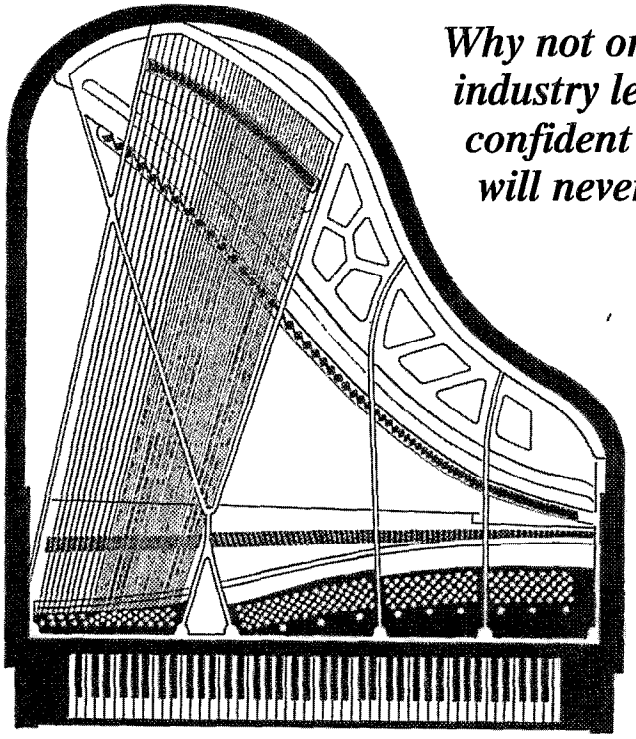

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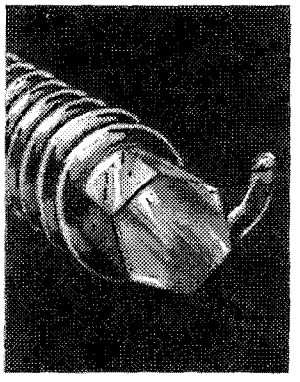

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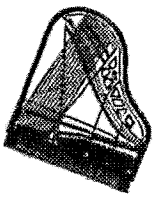

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EDITORIAL PERSPECTIVE
The Readers Write

We learned a lot about *Journal* readers from last November's *PTJ* Readership Survey. Approximately 1,000 readers took the time to fill out the question naire and return it; at close to 25 percent of the total readership, that constitutes a pretty good sample. Twenty percent of the respondents were female, reflecting the welcome trend towards women entering the field. According to the survey, about 75 percent of our readers are over 45 years of age. Amazingly, only four percent are under the age of 35! The RPT/Associate mix among respondents was close to the actual makeup of PTG membership, with 62 percent of respondents having the RPT credential and about 37 percent being Associate members.

Steve Brady, RPT
Journal Editor

A surprising (and rather disheartening) statistic appeared in the "total gross receipts" responses. Of eight possible ranges, from "Under $15,000" to "More than $70,000," the largest single number of responses by far was "Under $15,000." That category claimed roughly 28 percent of the readership. The next largest response, 13 percent, reported 1997 gross receipts of $30,001 to $40,000. In all, some 62 percent of the readership reported gross receipts of $40,000 or less in 1997. These numbers suggest two things: piano technology is very much a part-time profession for many of its practitioners; and even those who are working at it full-time are often very poorly paid.

Of those who responded, nearly 90 percent said they either read the *Journal* from cover to cover each month (35 percent), or read several of the articles and skim the rest (54 percent). Half of the respondents said they spent an hour or more reading each issue of the *Journal*. These figures may be skewed slightly in favor of those who read more of the *Journal*, because it's possible that the more avid readers were more likely to fill out the questionnaire.

A large majority of readers (76 percent) felt that the *Journal* is the same (28 percent) or better (48 percent) in overall quality than it was five years ago. About five percent said the *Journal* is worse now than before, and roughly nine percent of respondents were not members five years ago. Similarly, about 74 percent favored keeping the *Journal* a monthly publication, while 21 percent said they would like to see the *Journal* published every other month and about five percent were interested in seeing the *Journal* as a quarterly.

On the question of the publication's general slant, approximately 27 percent of those responding said they wanted a more scholarly/scientific/professional magazine, 11 percent felt the *Journal* should be a more "popular" publication, and a fairly solid majority (62 percent) said the *Journal* should stay the same in its general approach.

Among regular departments and columns, the TT&T and Q&A departments were rated highest by readers. Ninty percent (Q&A) and 97 percent (TT&T) rated them "Excellent" or "Good."

In evaluating coverage of specific topics in the *Journal*, the largest numbers of respondents (ranging from 48 percent to 58 percent) felt that the topics of scientific/theoretical, business management, history of the piano, human interest, health and wellness, aural tuning, and electronic tuning should continue to be covered at the present level. When it came to the topics of in-home repairs, regulating , and voicing, however, the largest responses (ranging from 52 percent to 63 percent) favored more coverage. Accordingly, prospective writers of articles for the *Journal* should consider writing on these three topics.

The overwhelming majority of respondents (83 percent) said that they considered the *Journal* to be a "very important" benefit of PTG membership. We'll try to use the information gained from this survey to make adjustments to the *Journal*, making it more responsive to the needs of the majority of readers. Thanks to all who participated!

Please submit tuning and technical articles, queries, tips, etc., to me:
Steve Brady*, Journal *Editor
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FEATURES

COLUMNS & COMMENTS

DEPARTMENTS

IN ADDITION

COVER ART

This month our cover is adorned with the action of a 1911 Steinway model K ebonized 52" studio upright piano, serial number 118837. See Page 34 for the story by RPTs Michael Travis and David G. Hughes behind this memorial to PTG founding Co-President John Travis.

PIANO TECHNICIANS
Journal
Volume 42 • Number 5 • May 1999

Build Your Tuning Business!

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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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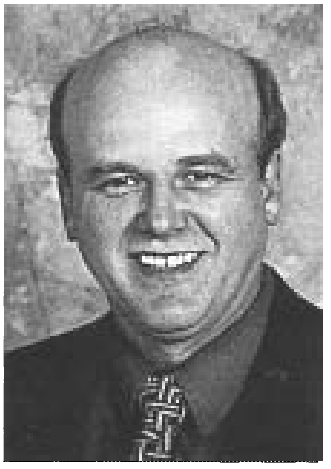
Deciding Where We Need to Go

In last month's message I discussed some of the factors of working in this trade as an individual technician within the greater expanse of the music community.



David P. Durben, RPT
PTG President

This month I would like to expand on that theme just a little and ask that we look at the position of our PTG chapter in our music community. What have we as a chapter done to improve our position or perhaps even to justify our position? What chapter projects have made a difference in the community around us? How are we as a chapter perceived in our community? What have we done to fulfill our mission and the mission of PTG?

So what do we do to gauge where we are, and how we fit, and what to do to improve our position? I am reminded of the first Long Range Planning meeting of the PTG Board (seems like eons ago) in the fall of 1995. What we did was to sit in a very open forum (we had a facilitator, but there was no "rank" or hierarchy within this meeting), and we attempted to identify our ***strengths, weaknesses, opportunities*** and ***threats*** in a comprehensive environmental analysis. We listed them and then tried to analyze their degree of importance, our ability to affect them and so on.

For a PTG chapter this can be a vital exercise, and while it needn't be as detailed or wide-ranging, it should include some basic essentials, e.g., are we meeting the needs of our own membership, are we meeting the needs of our community, where have we failed, and where are there opportunities for improved success? In fact, one of the best ways to get started would be to sit in a brainstorming session with the rest of the chapter, with the Vision 2001 plan, and pick apart the SWOT section (pages 13-17) to identify which parts apply to your chapter. Then you can plan an effective way to address your environment.

In this year's directory my message was directed at these and other questions that go to the heart of why PTG and its chapters exist. If our mission is to proliferate and improve the state of the art of piano technology, what have we done to fulfill it? When did we last make a point to invite those technicians who should belong to PTG to one of our chapter meetings? What is our relationship to those technicians, and what is our relationship to the local retailer? When did we last stop by his place of business? Are we welcome there, and if not, why not? Just as we must be cognizant of these relationships in order to be successful business people, we as PTG chapters must be aware of them for our organizational success.

However you decide to do it (there is no "one size fits all" that would work for every chapter, so I would expect to see quite a variety of approaches), I urge you to pursue this. We can be so effective in so many ways, but we will never be effective if we attempt to work in an informational vacuum. We must first know where we are – then we can decide where we need to go.

David P. Durben

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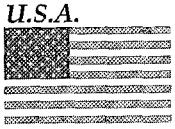

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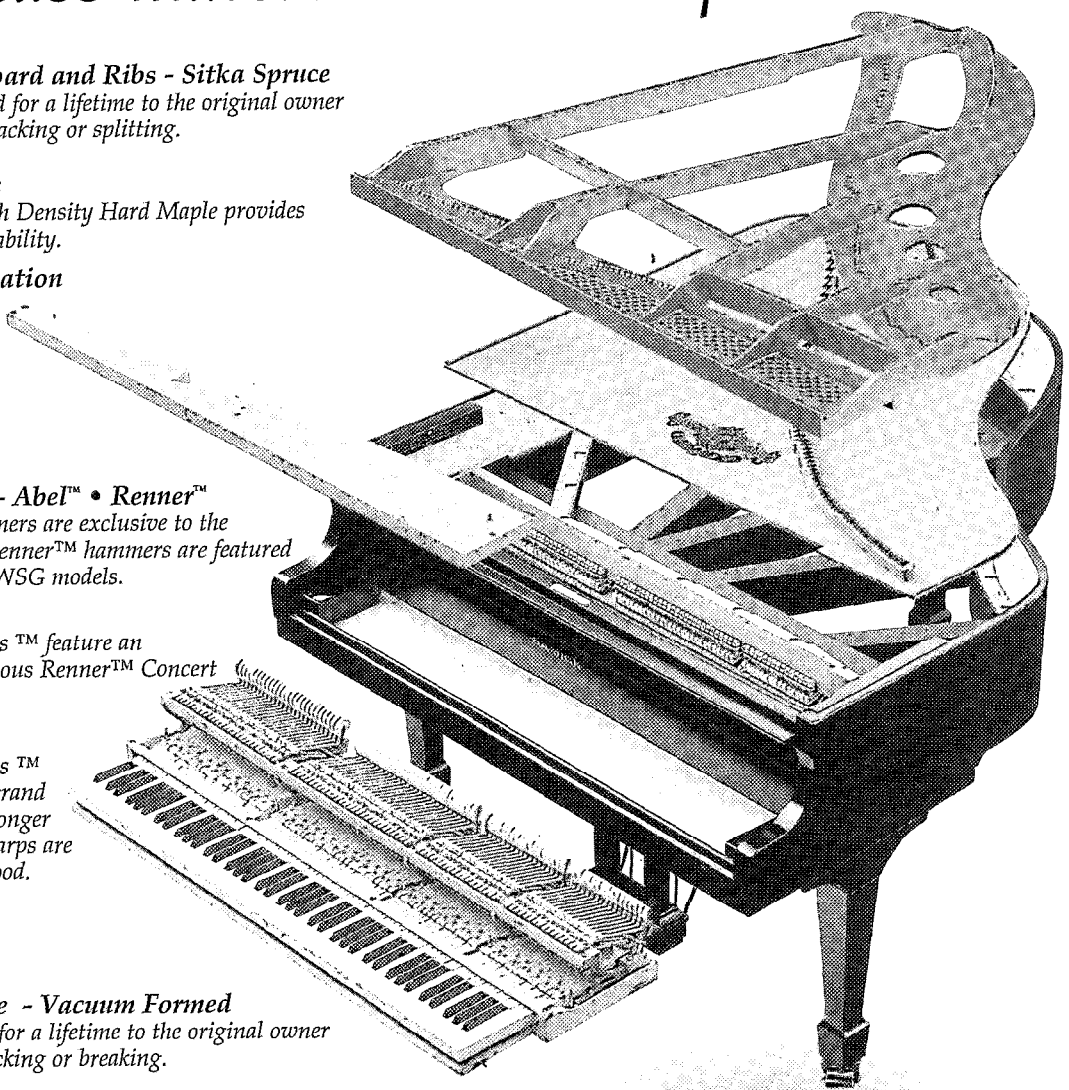

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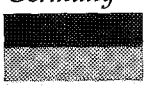

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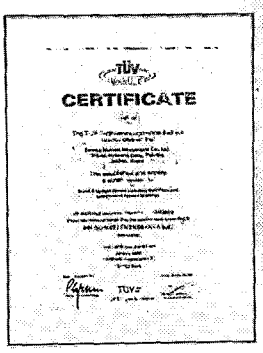

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Response to Soundboard Discussion

The "Q&A/Roundtable" in the February issue of the *Piano Technicians Journal* with the question of Mr. Puig was interesting for me as I have been doing soundboard repairs myself for a number of years. (I should add that the whole *Journal* is always a pleasure to read.)

Although I see the point in some of the answers that are against the use of old wood, I do not fully agree with them. Of course, soundboard replacement is usually considered when the old soundboard is damaged to the degree that simple repairs do not promise success. In many cases there is such severe damage to the wood itself (for example lots of cracks, warping, etc.) that the reusing of the panels is not advisable. In other cases, however, the wood is in good condition except for loose glue-joints, a few cracks or a loss of crown.

I frequently have to work on very old keyboard instruments, whose soundboards are several centuries old instead of the usual 60 to 80 years of a typical used piano. Many of these old clavichords and harpsichords can be brought to excellent condition without replacing any wooden parts; the main problem being foolish repairs of the past rather than the age of the material. After all, the difference between the left and the right edge of a quarter-sawn plank can easily be 80 years, so what shall be wrong with wood of this age?

I did a number of complete soundboard repairs, sometimes with new and sometimes with the old wood. My experience with the latter isn't bad so far. I think it is rather a question of the additional time that it takes to preserve the old planks compared with the cost of new ones. Here in Germany the material for a new soundboard costs me about 500 DM, which is an expense worth considering.

As I write this, I am sitting next to an 80-year-old Baldur upright that I repaired more than five years ago using the old wood. The soundboard didn't have a single crack, but all the glue joints had failed. This one has definitely not suffered from compression so far! I took it apart and re-glued everything, adding about 10 mm of new wood in the middle to compensate for shrinking. The old ribs were used again, as were the bridges, which had to be capped. The result is quite pleasant up to now.

— Jan Grossbach
Editor, Europiano

Public Opinion No Idiot

Thanks for another great issue (Feb. '99). I particularly enjoyed the "Q&A/Roundtable." I was amazed to see challenged the idea, so often repeated, that the old violins are the best.

I also liked the section on the value of plastic parts. However, I disagree strongly with the man who said "public opinion is an idiot." I hear technicians (and other experts) say this occasionally. It displays a most unattractive, and inaccurate, arrogance. All you can say correctly is that you know more about your field than the average person does. We are all part of "public opinion," and we all share common misconceptions that could use correcting. But that doesn't mean we're idiots.

— Mark Stivers, RPT
Sacramento, CA

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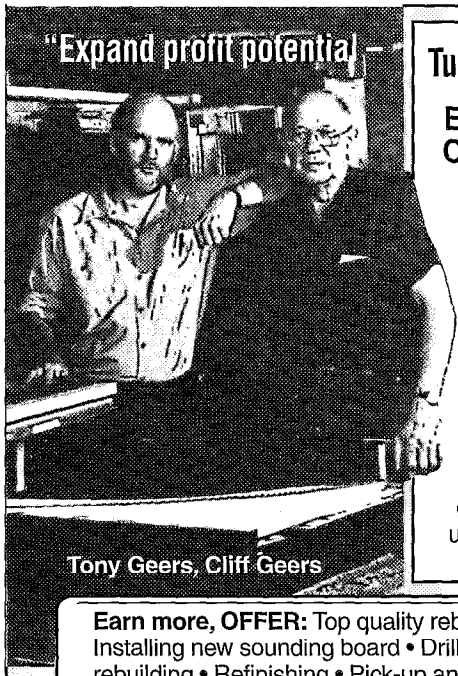

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Tips, Tools & Techniques

New Voicing Tray

This "voicing tray" consists of three parts:
1. a steel tray, 13" long x 3 1/2" deep x 1/8" thick
2. a ruled bar, 1/4" x 13", to travel hammers and serve as a spacer in the U-channel part of the tray
3. two clips (clamps) to attach the bar under the shanks for traveling hammers.

The tray may be used to support the hammers for doing "shoeshine" shaping of hammers from uprights and grand pianos. When working on uprights, the tray is placed under the hammers with the U-channel part of the tray under the hammer tails. Block the ends of the action up so that the action can be moved close to the edge of the workbench and use several widths and grits of emery cloth glued to 1/4" plywood paddle handles. The strips of emery are 12" or longer. The loose end is held in one hand while the other pushes the emery paper between the hammer and damper assembly. On grands the tray is inverted so that the U-channel covers the backchecks, holding the whole tray in place (see Photo 1).

The tray also gives great support in gang-needling of hammers.

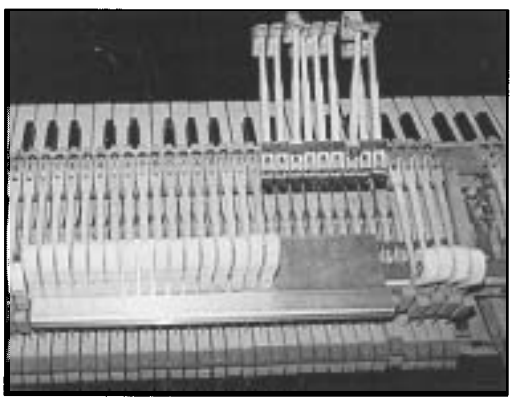


Photo 1 — Voicing tray shown in position on grand action, with inverted U-channel over backchecks.

The ruled bar is used for two purposes. It is a spacer to use when working on short-tailed upright hammers and fits in the U-channel, giving support so that less wobble occurs while shoe-shining the hammers. And it also is used to travel the hammers. The bar can be attached under the hammer shanks with clips designed to be out of the way of the movement of the hammers. The clips hold two shanks to the bar so that when lifted the shanks not held by the clips can be seen against the lines scribed on the bar (see Photo 2).

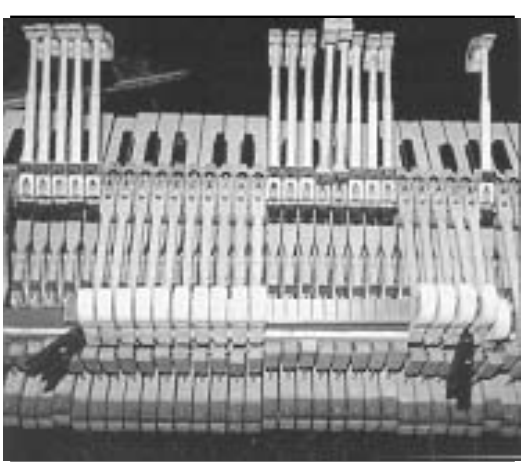


Photo 2 — Ruled bar shown with two clips attached.

The voicing tray is available from Mother Goose Tools, phone 1-800-343-5257.

— Stephen Brady, RPT
Journal *Editor*

Take a Pillow to Work

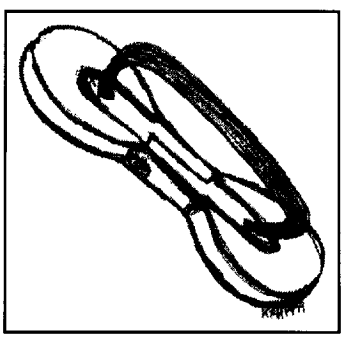
Carry an old pillow in your service vehicle. Why, you ask? Handy for short naps! But more importantly, when you install a Dampp-Chaser system under a grand piano that is sitting on a spider dolly (stage truck), you will appreciate having some padding between your back or head and the hard metal frame of the spider dolly.

— David A. Vanderhoofven, RPT
Kansas City, MO Chapter

"Thumper" Modifications

Here are some modifications to the back-to-back "thumper" used by some tuners to "sock in" their tunings.

- Drill small holes in the hammer moldings. The distance apart should be the approximate width of your four fingers at the widest point. For me (and my hammers), each hole placement works out almost where its molding comes to a point.
- Slip a length of 1/4" elastic (black shows less dirt) through each of the holes. It will be necessary to fold the elastic to shove it through the holes.
- Tie off one end of the elastic in a double knot, snip off any residual elastic from the knot, and "cauterize" the very end of the elastic to prevent the knot from becoming ... unknotted. Fold and insert the elastic in the hole on the opposite end, adjust the elastic for a snug but comfortable fit, and repeat the knotting process.



The result is a "wearable" Palm Thumper. In use, the device stays snuggly against the palm of your hand. From the rear, only the exposed tips of the hammers are visible, of course, along with the elastic stretching over the back of the hand.

The beauty of this is that the device is out of the way for setting/testing intervals, otherwise the hand is simply rotated for a, ah, test blow.

Nothing to pick up, nothing on a tether to swing about and serve as a distraction.

— Jim Harvey, RPT
Western Carolinas, NC Chapter

'It's a thrill to be an *All Steinway School* because I really feel that I'm working with the best.'

– Enrique Rosano
Chief piano technician
University of Arizona School of Music

When Enrique Rosano fell in love with the incomparable Steinway sound as a 7-year-old, he couldn't possibly imagine that 40 years later he would be an important part in the purchase of nearly 100 of these exquisite musical instruments.

But as chief piano technician at the University of Arizona School of Music at Tucson, Enrique, indeed, was a key factor in earning this university the highly valued *All Steinway School* designation.

"It's a thrill to be an All Steinway School because I really feel that I'm working with the best," says Enrique, who compares Steinway pianos to finely tuned racecars. "When I prepare a Steinway for a recital, I know its sound will remain fresh and strong from beginning to end. Its consistency and durability are simply beyond compare.

"Each Steinway has its own distinct character that delivers a beautiful, sophistocated, full-bodied sound." And because of his strong appreciation of Steinway quality, Enrique also has become part of history. The university's recent selection of 98 Steinway grand and upright pianos represents the largest single institutional purchase since Steinway & Sons began handcrafting the world's finest pianos 145 years ago.

For information on Steinway & Sons' technical seminars or for a diskette on Steinway's new guidelines for institutional piano service, please contact Gary Green at (800) 366-1853.

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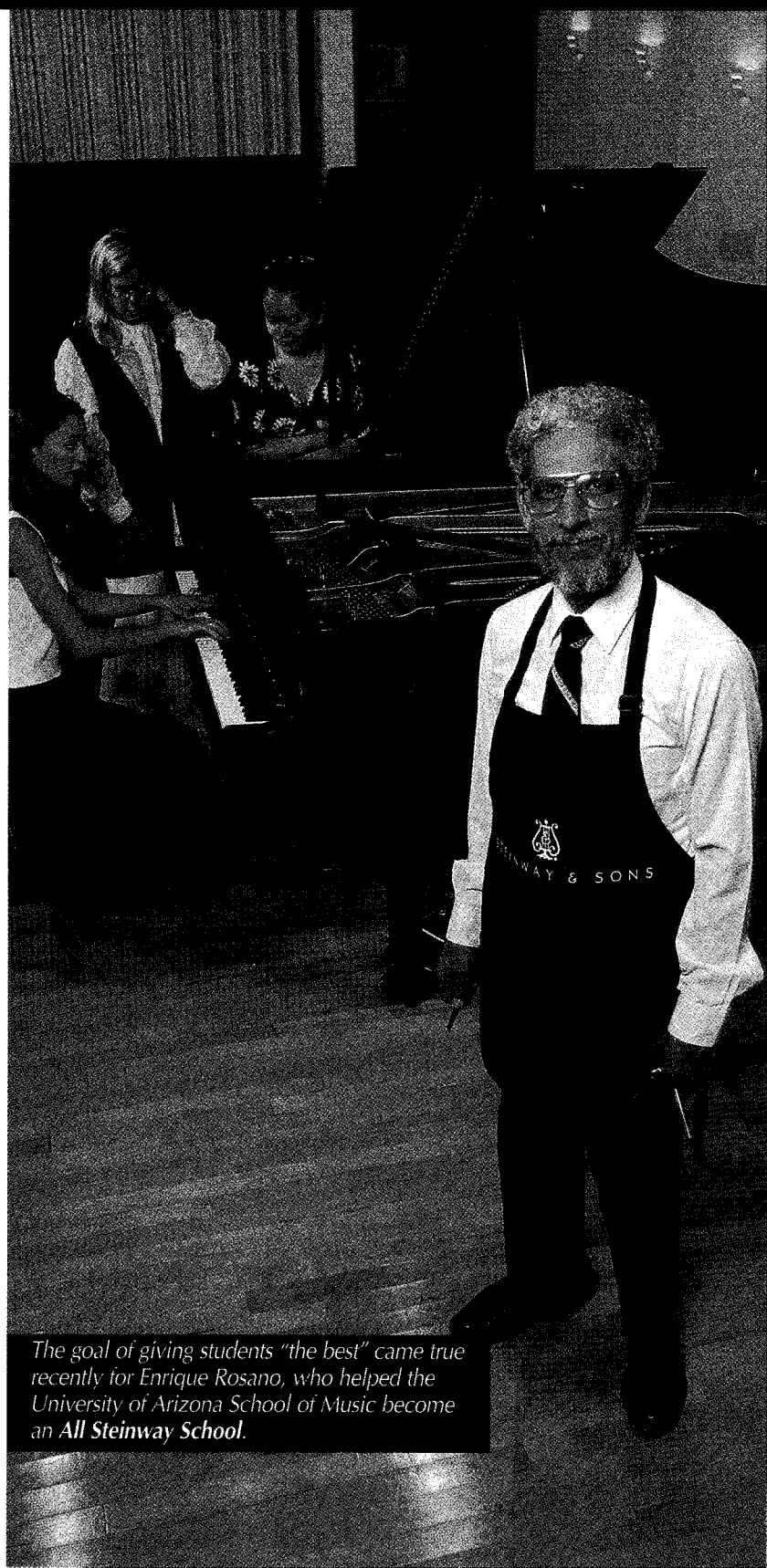

The goal of giving students "the best" came true recently for Enrique Rosano, who helped the University of Arizona School of Music become an ***All Steinway School****.*

Action Blasting

A few months ago I met a technician who told me he frequently used a low-pressure spray gun to clean the dust and dirt out of those difficult to reach places of piano actions. He went on to say that he used silica beads which, although carcinogenic, could be re-cycled. The action was removed and placed in a typical spray booth. He promised me the spraying wouldn't affect the bushings, etc. This is hard to believe. This method, he said, would remove the ingrained dirt. He also said something to the effect that he had once "sand-blasted" an action. I have asked a few technicians (including supply houses) here in the UK, but no one is able to enlighten me.

I know about high-pressure air blasting. This is something different. Could someone let me know what he was talking about? Does anyone spray his or her actions clean? If silicon beads are a no-go, what is the alternative? Many thanks in anticipation.

— Alan King
Scotland, UK

Stan Kroeker, RPT: To familiarize you with this process, I suggest reading Bill Spurlock's series of articles in the January to March 1992 issues of the *Piano Technicians Journal.* We equipped our rebuilding shop likewise a few years ago and we have not regretted doing so. The quality of our work and the efficiency of our methods have increased tremendously. You also can purchase the PTG reprint book entitled, *General Repair: Reconditioning of Parts, Tools and Felt Work,* which includes the articles on glass bead blasting and is available from the PTG home office. [***Editor's Note:*** *This collection now also is available on CD-ROM from the Home Office.*]

Jim Coleman Sr., RPT: My son, Jim Jr., has been "sand-blasting" with finely ground walnut shells for several years. This does not leave any grit in the key bushings. The only caution to be observed is that you should not linger too long in any one spot because it will erode the softer parts of wood. This process will make the action brackets look new again. The keys, action parts and hammers will be clean after this treatment. If you need to clean the softer flat damper felts, it is better to decrease the air pressure of the blaster. Regular pressure works fine on the harder wedge damper felts. It will remove the marks on the felt left by dirty or rusty strings.

Newton Hunt, RPT: Rolls Royce used finely ground walnut shells to do the final polish on the glass they installed because the shells were the finest polishing compound available. I was thinking that tiny Styrofoam™ pellets would do well. Try sandblasting supply companies for different materials.

John Dewey: I blast action parts in a bench top sandblasting cabinet I got for about $150 from a tool supply company. I use Grit-O-Cobs (from The Andersons, P.O. Box 119; Maumee, OH 43537) which are ground from the hard parts of corn cobs. They come in several sizes. I like the 40-60 size with about 10- to 20-psi air pressure. I find they have less dust than walnut shells. The Grit-O-Cobs are in the $10 price range for a 50-lb. bag. Freight is more than the product.

McMaster-Carr Supply Co. has several different blasting media (sand, glass beads and nutshells). Their Chicago phone is (630) 833-0300. They have stores in several other cities. I find their prices about 10 to 20 percent higher, but they have just about anything in hardware you could ask for. The index of their catalogue runs 100 pages.

Mike McCoy: The Eastwood Company in Malvern, PA carries blasting media: glass beads, walnut shells, silicone carbide and poly abrasives. Walnut shells are $37.99 for 50 pounds. They are an automotive tool and body supply shop. Eastwood Co.; Box 3014; Malvern PA 19355; 800-345-1178; www.eastwoodco.com.

Barrie Heaton: Eggshells are very good as well. They are more widely available.

Richard Moody: Hmm ... Would this work on keytops?

Bill Simon: No, they are too hard for plastic keytops. You should know that there are softer types of "abrasives" sold by suppliers, one type being corn-cob bits. These might work on keys, polishing rather than abrading them. I have seen a machine shop with a relatively soft plastic grit. Not for use on piano actions, but salt or sugar is occasionally used in some applications. I think sugar is softer.

I have blasted actions for more than 15 years now, and I still am using the original stuff I got in a 30-pound bag. I blast in an area of my shop where I can vacuum it up when finished. Doing that also cleans the grit, walnut or pecan shells in my case. The dust and dirt of the action, and the tiny wood fibers, stick onto the cloth bag in my shop vacuum, the grit falls to the bottom of the can. So, I blast, vacuum it up, blow off the bag, dump the grit into a pile on the floor again, and vacuum it up again. Repeat as necessary. I originally tried washing the grit because I could not find any more Shellblast in the grit size I liked. Washing was more or less a disaster. Vacuum separation for cleaning works very well.

Steve Grattan: We rebuild pianos/player pianos and reed organs and have been using the glass bead-blasting method for cleaning everything from wippens to pedal rods for two plus years. It is the best system for cleaning parts *before* they are rebuilt/re-leathered that I have ever seen. I built the bead-blasting booth that Bill Spurlock published plans for in the *Journal* and use medium (140-grit) beads.

In cleaning keys, you can blast up to and onto the ivory with no damage. Cover the capstans with short pieces of rubber tubing. In actions we put a small square of masking tape on the heel and top of the jack and a piece of player tubing over the spoon. On grand actions we cover the top of the repetition lever to be sure that the graphite is not roughened and also cover any other parts that we do not wish to blast. Old shanks and flanges will look like new, ready for new knuckles or bushings.

Be sure that the pressure is not set too high. We operate from 30- to 120-psi. A slightly roughened surface will sometimes occur, but we have had no problems from that. I find that bushing cloth is too dense for any beads to penetrate. I have seen techs blasting old upright actions, even hammers and supported dampers. Blowing them out with air takes the

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leftover beads out. This is a great way to clean up actions that are getting a quick reconditioning.

The beads we buy come from Grainger and have no free silica and no listed carcinogenicity and are not a fire or explosion hazard. However, breathing the dust can irritate lung conditions so take appropriate precautions.

Del Fandrich, RPT: Before building our bead-blasting box, I checked with Bill Spurlock for any last minute updates on his design. He suggested that instead of building his we should check into a design offered by TIP Tools & Equipment; P.O. Box 649, Canfield, OH 44406-9984; Phone: 330-533-3384; Fax: 330-533-2876; order phone: 800-321-9260; WWW: http://www.tiptools.com

These folks specialize in abrasive blasting equipment and supplies. We ordered Cabinet Plans #6600 for $7.50, built it with a few modifications and have been quite happy with it. We also got all of our supplies from them. Their prices were fair and their service has been excellent.

Simon: Why would you not use some non-harmful abrasive, like pecan shells, the dust of which is less hard than the centerpins, so that any dust residue in the centers would not wear away at the pin and the felt?

Additionally, one doesn't have to go to great lengths to avoid the dust (cellulose) generated when blasting with shells, whereas glass-beading produces silica dust, with a real threat to health with silicosis.

Just for the sake of the customer's property (the action does belong to them) you might at least try shell-blasting. It will not work on metal as well as glass beads, because they "explode" when they hit metal and blast off the surface with extremely sharp edges. Then, of course, the particular glass bead is sharp dust and no longer a bead. Just ask your abrasion supplier about this, or try a small sample against metal and see how the character of the material changes, or use a microscope and actually look at the residue.

Kroeker: Personally, I don't care to breathe any kind of dust, toxic or otherwise, so I take the precaution of using a well-sealed booth with a vacuum attachment to exhaust the floating debris soon after it is blasted. I also wear a dust mask as added protection. I don't have the benefit of microscopic analysis to back up my understanding of how glass beads abrade the surfaces we blast, but I am picturing them as microscopic bowling balls as opposed to jagged microscopic rocks (sand).

I believe that most of the floating crud that is generated is the dirt we are blasting from the parts. The beads themselves fall immediately into the hopper where they are recycled, seemingly forever. As to your concern over damaging action centers ... well, there is simply no direct line of spray against any of the centers so it is hard to imagine how these microscopic spheres are going to take a 90 degree turn and enter the bushing to cause such imaginary havoc.

Simon: My concern with glass-beading actions is not with the health hazards to the blaster, although there is a lot of material on the dangers of breathing silica dust. Check your abrasion supplier, look it up on the Internet or ask OSHA.

My only concern is with the hard particulate dust left in the centers. I do have a microscope and I have looked at glass bead dust, albeit years ago. It is true, they do look like microscopic bowling balls, unless broken, which they are supposed to do to blast more effectively.

Chipping

I'm almost done with my first restringing and would appreciate some input on how to do the initial pitch-raise, or "chip tuning." The method described in *Piano Service, Tuning & Rebuilding* by Reblitz to properly load the soundboard calls for using an electronic tuning device (or some type of chromatic tuner), which I don't have. So, I'm looking for an aural tuning scheme.

Thanks in advance.

—Jerry Hunt
Carrollton, TX

Dale Whitehead, RPT: You do need some point of reference from which to start. You may have a good sense of relative pitch, but a tuning device might be a time-saver for you.

I start with all the A's and D#'s, roughly bringing those notes to pitch. You may need to develop your own method of locating the A's and D#'s on the plate, but this may save you some time. Start with the lowest A and count up six unisons. Mark this D# with a white chalk mark at the agraffe or v-bar. Count up another six unisons and this should bring you to your next A. Mark this with white chalk on the tuning pins (just enough so you can see it)...and so on to the treble. If you've counted correctly on an 88-note scale, your last marked note will be the highest A with three unisons left to the highest C. All A's marked on white on the pins, all D#'s in white at the v-bar or agraffe, etc. Spread out the pulling up of the notes throughout the entire scale to *load* the board and plate evenly. Go have a snack and when you come back, chip it again.

Check your coils as you're pulling up the notes. They'll drop down as the pins are being turned a great deal. Although there is no speed race involved in chipping, you should be able to do this with practice in about 15 minutes or less. This method may be a tad cautious, but has worked well in the past.

Jim Coleman Sr., RPT: In the factories, the stringer puts enough tension on the strings to hold the coils tight. He feels the tension of the strings with one hand as he pulls them up.

A simple way to do a chip tuning is to have another piano nearby. Play a note from it every once in a while to make sure you are still in the ballpark. Don't be so careful on the first chipping. On the second chipping, you can have someone else play note for note as you go. After first chipping you can tamp the coils, check string spacing, etc. Using an old plastic keytop works fine for chipping the strings. Don't pluck the strings but snap down on the left string and pull up. Then snap down on the center string and pull up. Then snap down on the right string and so forth. Some people prefer a softer shaved dowel for chipping the bass strings.

Susan Kline, RPT: What I do is take thin front-rail punchings (the blue and pink ones) and label all the A's by putting a blue punching around a tuning pin on each one,

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and the D's, with a pink punching. Then set the A's from your fork, set the D's from the A's, and start filling in between by semitones. It'll be all over the place. Once you've finished that, and every note has at least tried to attain a pitch, set the A's and D's again, and start all over. I usually use an old key tail for a plectrum. Work fast, but of course also keep an eye on your tuning pin coils and be sure all the beckets are well pressed into the holes. After two or three times through the whole scale you should be ready to put the action back in for a rough tuning.

Bill Bremmer, RPT: There are two ways I might suggest. If you have all of your notes marked, simply start with your A4, pull it up to pitch and perhaps a little beyond (8 bps). Pull up all the other A's, then move to the next note of your usual temperament pattern or move in the cycle of 5ths and pull up all the notes across the piano each time. This will load the board very evenly.

Another way is to use a common pitch pipe. Whether you tune the whole unison at once or just one string it really won't matter much. Loading the board evenly sounds like a prudent idea, but it is really not necessary. You do need to have a good musical ear if using a pitch pipe. I don't have any problem with it at all, but others I have tried to train sometimes just can't get it. You blow the note, retain the pitch in your mind, pull the strings up to the pitch you remember or perhaps just a bit sharp of it, particularly in the treble and high treble.

Don't worry about precision in chip tuning. This operation is solely for applying the first rough tension on the strings. No matter what you do the piano will be *violently* out of tune when you get the action ready for the first real tuning. New wire is very unstable, and you will not have the benefit of the action for settling the strings and creating a real tuning. Your first rough tunings also can be quite sharp; 25 cents is common practice. This will mean that you can tune your A4 a good eight beats above pitch the first couple of times. The pitch will naturally fall quite quickly afterwards.

Jim Bryant, RPT: I agree with what Jim and Dale have said and include the following for your consideration: Place masking tape on the strings just below the pins and above the first pressure point; usually this will put it on the plate felts. That's okay, just don't press it down too hard. Label each note on the tape, starting at one end with a magic marker. This will take a minute or two, but if you are like me it will save a lot of "duhs" and "aw, shucks's" by keeping you on the correct note without stopping to count every so often. Try it – you will like it. As soon as you can justify an electronic tuning device it will make this process much easier as well as faster.

Jon Page: I run a strip of masking tape along the agraffes and pressure ridge then mark all the sharps with a line. That way I have my bearings from the 'keyboard' configuration of the marks.

Also, if you had used a measuring guide (other than four fingers) to cut the wire you can be assured the becket placement will be consistent. So "express" chipping can be accomplished simply by becket placement to get tension on the strings. Initially pulling the beckets to one o'clock with a stringing hook in one hand and the hammer in the other zips right along. Space strings (*especially* the tenor section over the wide cloth counter bearing), tap coils, squeeze beckets. Then pull to two o'clock. Check pitch and chip via plucking (this is where the masking tape comes in handy), check coils. Once the tension is up it's time to trash the tension by squeezing the wire at the hitch pin (looped stings, not tie-offs), remove the natural curve of the wire on the rear duplex, bridge pins, v-bar or agraffes and counter-bearing bar. Tension may need to be reestablished intermittently. Double-check coils on pins.

Tune, tune, level strings, tune, fit hammers to strings, tune. Tired yet? Regulate, install dampers, and yes, you guessed it; tune. Fit hammers to strings, tune. Repeat as necessary. I'm tired just writing this.

Ron Nossaman, RPT: You also can get a decent visual indication of tension by looking at the position of light reflection as it moves along the string as tension is added. It won't get you to accurate pitch, but it can get you in the ballpark for initial tensioning.

Barrie Heaton: The way I do it is to mark the C's with a punching, tune middle C to the fork and tune all the C's as octaves. Start at top C and semitone your way down to the bottom A. The C's keep you in line and stop you from going too sharp. The reason why I used the C's and start at the top is that you are pulling the note up to a note, rather than past it, which is easier. You are tuning the note you are pulling in, a semitone to the last one you have just done, so there is less chance of you over-judging the pitch.

The job can be done relatively quickly. Ten minutes is the speed normally done in factories; it should take you 15 to 20 minutes. Once done, chip the scale in the middle and then tune the rest of the piano in octaves. I then rub the strings down with a piece of two-by-one softwood about three feet long. I tend to use this instead of a stringing wheel, as I find stringing wheels tend to leave the strings a little more uneven, so you have to do more string leveling than usual later on. There is less chance with the broad span of the piece of wood. I give my pianos one half step and three chips with a rub down after each. If the action is done I will just do the half step and tune normal, but that is rare. Enjoy it. Pulling the bass strings up is really something to enjoy.

Installing New Knuckles

I am putting a new set of knuckles on a Young Chang grand Model 150 that is about three or four years old. I am doing this under warranty because the action was sounding very noisy with rattling and clacking. I have removed the old knuckles and cleaned all the old glue off. Now I am ready to put the new knuckles back on the shanks. I just want to make sure I am putting them on the correct way. Is it important which way the nap of the skin is facing? What kind of glue is the best to use? Is there an easy way to make sure they are glued straight? If you have any other information that would help it would be appreciated.

— Arthur Chickering
Rockland, Maine

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Roger Jolly: It is very important to have the nap facing the same direction on each knuckle. You need to have more friction as the jack moves the hammer and shank forward for maximum efficiency, and less friction on return for the best possible repetition. This presumes that the replacement knuckles are *leather.* With much of the synthetic material that is being used it is hard to tell.

I use good old Titebond™. Use enough glue to fill the slot and the immediate area where the leather will touch the shank. This is a tip worth noting. Any looseness in this area will be heard in the voicing. It is also important to have the core fitting to the bottom of the slot. I have a small press for this job, but I used to do it with vice grips with leather glued to the jaws so as not to damage the new surface. Hopefully the new cores work out to be a force fit.

Using a small engineer's square to ensure that each core is square to each slot can save potential problems later on. I have made a jig to ensure straightness, but a simple method, is to cut a block of wood so the hammer head can hang downward and is just wide enough to let the flange swing down. Using the eyeball method, check the flange end of the shank and the knuckle position as you go.

Barrie Heaton: I was taught differently, Roger. The nap should run with the jack. The jack runs to you on a grand, (well there is the odd one that doesn't) and so should the nap. This is for a smoother let-off and drop. I determine which direction the nap runs by touch. However, all the knuckles I have fitted in the last 15 years or so have the direction marked. (A pencil mark on Abel and a red mark on Japanese knuckles.)

Also, use hot glue and run it along the slot, not in the slot. The glue works like the collar on a hammer shank. This is to allow removal at a later date. Glue will seep into the slot, but it is limited. Doing it this way allows you to get a snug fit to the bottom of the slot without having to use excessive force.

Jon Page: To determine the nap orientation, if no mark exists, brush a knuckle on your lip. You will feel a smooth surface one way and a rough surface the other. The smooth surface is oriented in the direction of the jack escaping for a smooth touch.

Keith McGavern, RPT: I would never have thought I would have to ask this again, but it appears I will have to do so – this direction of the "nap of the knuckle" thing. What Jon and Barrie have mentioned does not ring correctly from what I thought I understood a long time ago. So ... which is it? Smooth on the way out or smooth on the way in. Is there anyone who can officially settle this matter, please?

Jolly: Like you, Keith, I would love to see the explanation of why and how. Also some technical comparisons of one direction versus the other.

I have been installing them with maximum friction going in, minimum on return. Barrie has got me really thinking, as I can't even recall when or why I was taught that way, but it makes sense.

Barrie's method of gluing with hot glue is the way I was taught, but in our extremely dry climate, it is prone to a lot more clicking. If the new knuckles are a tight mechanical fit, (ideal) I'll dry them down in the oven for about three hours, and they just slip into the slots very nicely.

Heaton: I must admit I have tried to detect nap on a Yamaha and found it hard to tell the difference. It seemed to be the same in both directions. This was on an action model in the workshop. However, the Herrburger-Brooks action I tried was in the direction of the jack. I also spoke to Renner UK and they said nap *should* run with the jack.

As to the advantage, when you are playing soft you have less friction. Also, as the knuckle gets worn the jack is in more contact with it, so there is more friction. If you have the nap running against the jack you will have even more friction and this is more noticeable on soft playing.

Page: In the Renner USA Parts Kit, every knuckle has the smooth surface oriented with jack escapement, toward the flange. The same on the Steinway and Tokiwa sets. Since the jack is actually in contact with the knuckle while depressing the key it makes sense to me not to have the jack roughing up the nap each time. The repetition lever holds the knuckle up for the jack to slip back under. If the nap were to inhibit the jack's return, the knuckles are too rough anyway and should be replaced. Also, more important is how the knuckle is riding on the repetition lever. On depressing the key the contact motion between the knuckle and the lever is toward the flange. So this is where you want reduced friction.

Where friction is an important factor in actions, orienting the nap for smooth operation is essential. The knuckle still will have a drag effect on the jack since it is leather; it does not need the added resistance of going against the nap too.

After treating knuckles with a mixture of Protek™ and Teflon™ powder and letting it dry, I burnish the knuckles with cork glued onto a strip of wood, always with the last stroke toward the flange. (The spacers from Renner shank sets are great for this).

Ted Sambell, RPT: Every current action maker has the nap on the knuckles lie toward the hammer shank center. In reality it does not seem to matter too much since with most leather it is hard to tell the nap direction. The theory is that the jack always will return provided the center pin bushing, spring strength and lever height are satisfactory, and so there should be the minimum of friction during the downward keystroke. Of course there are those who take a contrary view. I think covering some knuckles with leather that has a heavy nap and conducting down and up weight tests is the only way to prove it. PJ

A Guide to Bridge Recapping – Part III

By Bob Hohf, RPT
Contributing Editor

"Get out the stool and sit down ... Look at what you're seeing."
How to Keep Your Volkswagen Alive
By John Muir

In a hurry? Slow down. If you're considering your first attempt at recapping bridges, you have plenty to think about. Take a few deep breaths. Save the hurrying for the fourth or fifth recapping job. As in most repairs, mistakes made while recapping can be remedied, but there are many steps involved and time is cumulative. A mistake made in the final stages of recapping may require removing the new cap and starting over. This can be educational, but we are doing this for a living and such corrections can be very costly. So take plenty of time inspecting the assembled piano. Look at the original bridge work and determine where it is good and where it is not so good. Check the string alignment and downbearing to determine whether your goal is to duplicate the original or correct it. Develop a mental image of the entire repair, step by step, and a clear picture of how you want the completed job to look. This is no mere exercise because once you begin, there is no turning back; and you must have a standard for comparison in mind, so if things go bad, you can tell right away, and if things are going well, you know it.

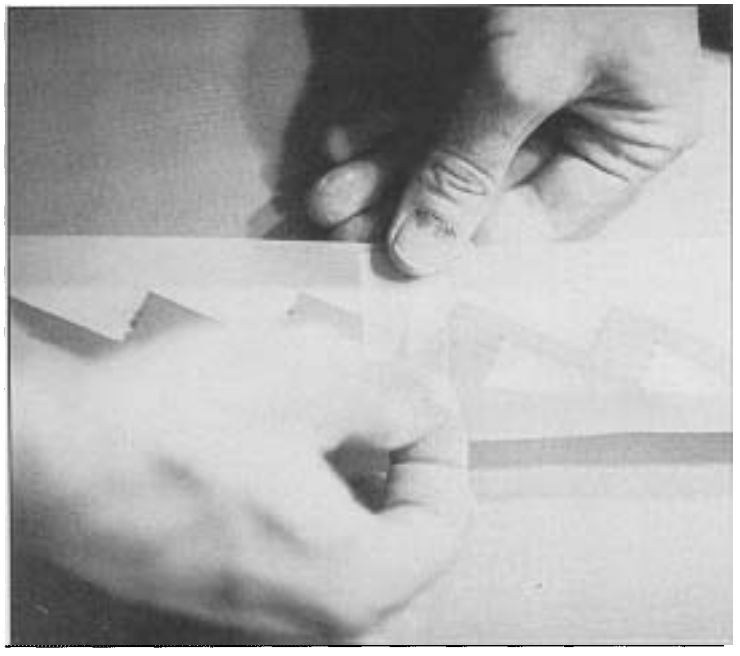

Photo 1 — Taping Mylar strips to top of bridge.

Measuring & Recording Locations

There is more than one way to fit recapping into the normal sequence of steps in a rebuilding project. My preference is first to take measurements to locate the plate relative to the bridge. This is the one parameter that is the least likely to be changed regardless of any changes being made to the fit and alignment of the parts of the piano. I do this by measuring the distances between the top and bottom hitch pins and bridge pins of every section with calipers. Then take a pointed felt-tip marker and mark on the plate the locations of the center strings of all the three-string unisons, assuming the plate will be refinished. These marks will be very helpful later when laying out the unisons on the new bridge caps. Marking the center strings is very easy with the old strings still in the piano, and trying to count them out later with the strings out can introduce a source for fairly serious error. Once the plate/bridge location is measured and the center-string positions are recorded, I remove the strings and tuning pins.

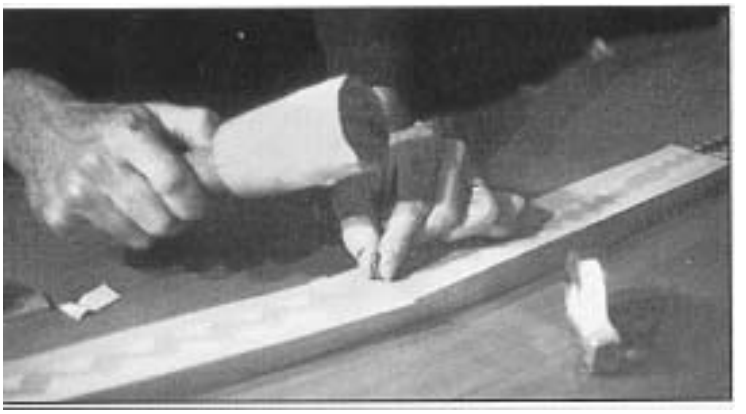

Photo 2 — Tacking Mylar template in place with veneering pins.

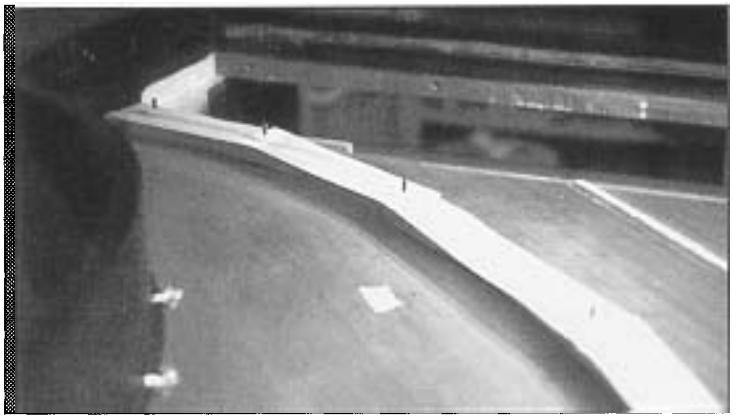

Photo 3 — Blank template shown tacked into place.

My preferred order for the next steps is as follows: pull the plate, remove the pinblock and nosebolts, pull out the old bridge pins, make a template of the original cap, then remove the old cap. Then I make the new pinblock, reset the plate elevations, if necessary, and pin the pinblock in its final position. The reason for this is that all subsequent measurements in the recapping process are made relative to the position of the plate and strings. The position of the plate and the string heights above the keyes are determined by the pinblock location and the height of the rim plate supports. During the course of the repair, the plate goes in and out of the piano

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many times, so it is critical that it goes into exactly the same position every time. I use a system of shims and 1/4" registration dowels so that the unbored pinblock also may be inserted into the case and removed. Removing the pinblock allows more clearance at the front of the piano for working than if the pinblock is permanently mounted in position. Because of the necessity of inserting and removing the plate many times, I strongly favor dowel plate supports at the rim or some other positive rim support for the plate. Those more familiar with the Baldwin system of plate suspension than I am will have to adapt the techniques to that system.

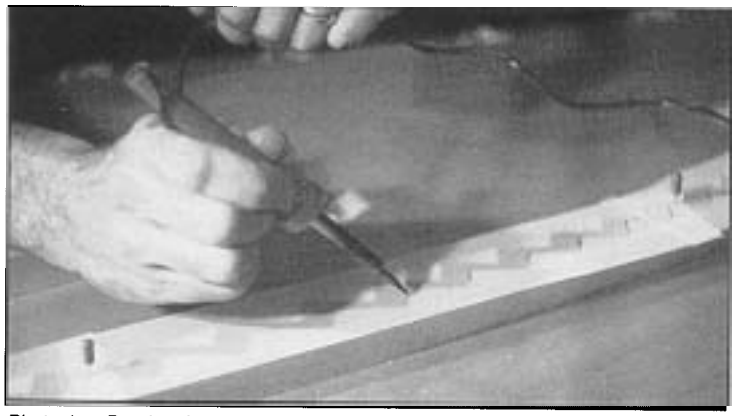

Photo 4 — Burning through Mylar with soldering iron.

Making a Bridge Template

Like most technicians, I make bridge templates out of Mylar sheets cut into strips about 2.5 inches wide with the frosted side up. The strips are laid on top of the bridge and taped together (Photo 1), then tacked into place using veneering pins (Photo 2). The blank template is shown tacked into place on a treble bridge in Photo 3. The bass bridge gets similar treatment. The original bridge pin holes are burned through the Mylar using a soldering iron with the tip ground into a shape that will fit into the holes (Photo 4). The outline of the bridge and the notching are then sketched onto the frosted surface of the Mylar (Photo 5).

While the template should be made accurately, we will not be using it to locate the new pin holes in the new caps, since copying the old locations frequently passes old tonal deficiencies on to the rebuilt piano. We will be using the template to lay out and fit the new capping material onto the bridge. The new raw caps will be held in place using 1/8" registration pins and the template helps locate these pins where they will not interfere with the new bridge pins.

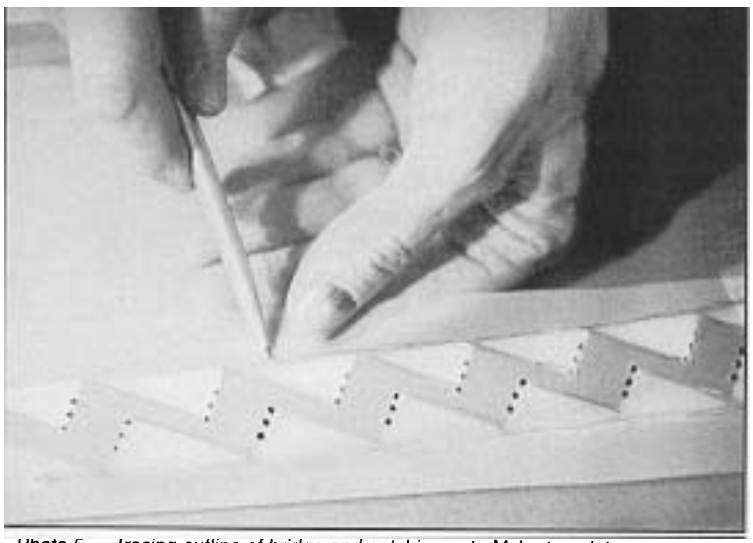

Photo 5 — Tracing outline of bridge and notching onto Mylar template.

Removing the Old Caps

Before removing the old bridge caps it is a good idea to take a moment of serious reflection, because this step represents the point of no return. Once wood is removed from the top of the bridge, it must be replaced, and the only remaining record of the original configuration is the template. For those who are just beginning to learn recapping, it might be a good idea to take some measurements of the height of the original bridge above the soundboard, front and back, at several locations along the bridges. Referring to these measurements further along in the repair can ease one's mind. However, I no longer take these measurements, because they have little or no relevance to the finished heights of the new caps, especially if any changes are made in the plate elevation.

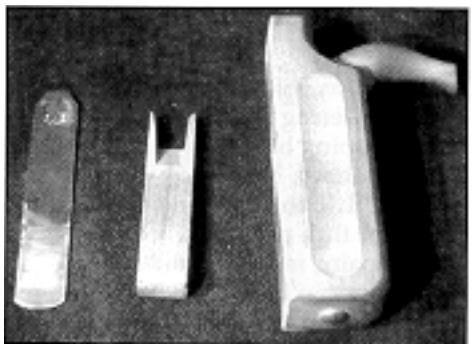

Photo 6 — Disassembled scrub plane. Note that iron is ground convex.

Of the many possible methods of removing old caps, I strongly recommend hand planes over power tools. Power tools are messy, noisy, and often dangerous, and when things go wrong, they can go *really* wrong – in a hurry. Hand planes are much faster and more predictable than a router for this operation. I have personally never used a power planer, so I cannot speak to its advantages or disadvantages. It is important to keep in mind that the finished top surface of the bridge does not define a single geometric plane, but rather a complex contour. This contour is determined solely by the positions of the strings, not by any reference to the shape of the soundboard or the level of the top of the rim.

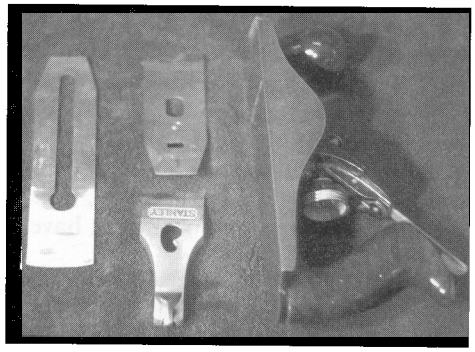

Photo 7 — Small smoothing plane, disassembled. Note that iron is ground slightly convex.

The three hand planes used in removing the caps and preparation of the top of the bridge for gluing are pictured in Photos 6, 7 and 8. The plane in Photo 6 is a scrub plane and

is characterized by its short length, narrow width and narrow iron ground convex. Notice that the iron has no chip-breaker. Planes without a chip-breaker are designed for fast stock removal. The extreme convex shape of the cutting edge allows the plane to cut in the same manner as a gouge, *cutting* rather than *tearing* wood fibers at the edge of the cut. The scrub plane is capable of making a deep cut with relatively little effort. It is with planes like this one that boards were thicknessed before the advent of power thickness planers. When this blade is making a deep cut, it produces *chips* rather than *shavings*, and, while the sharper a blade is, the better it works, sharpness of the scrub plane iron is not as critical as with planes used for finer work.

In order to get the feel of a scrub plane, practice on a good, solid chunk of scrap rock maple. Try different

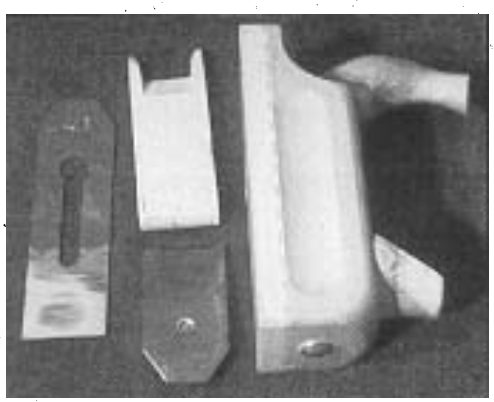

Photo 8 — Disassembled smoothing plane with iron ground flat.

depths of cut. Plane the length of the board in both directions, plane the diagonals, plane across the grain; you will be amazed at what can be done with this tool. When you have a good feel for how this plane works, take it to the bridge. At first, it would be very advisable to be conservative with the depth of cut. Taking a little extra time can save trouble later. Planing *against* the grain on the old cap can actually speed the removal of material by creating bigger chips than planing *with* the grain. But be advised that, with a deep cut, the plane can start a split that goes through the glue line and into the

Photo 9 — A planing technique for use on bridges.

body of the bridge. Generally, I hog down the old caps with the scrub plane in two passes, first with a deep cut and second with a shallow cut, and stop just short of the glue line between the cap and the bridge body. With practice this step takes about 15 minutes for all the bridges.

Once you have removed as much material with the scrub plane as is safely possible, the remainder of the old caps are removed with the plane in Photo 7. This is a small smoothing plane with a chip breaker and the blade ground *slightly* convex. The purpose of this plane is the same as the scrub plane only less. The depth of cut is set much shallower and it removes *shavings* rather than *chips*. Planes with metal soles can be waxed to decrease friction and increase control. As a general rule, higher blade velocity translates into less operator effort, so the ability to move the plane quickly and in control can make planing much easier. The plane in Photo 8 and its use will be described at the end of this article.

Planing *against* the grain at this point is risky. Again, I do this finer stock removal in two steps: a greater depth of cut can be used to just short of the glue line, and a quite shallow cut to just through the glue line. The edge of this iron must be sharper than the scrub plane to reduce tear-out, but planing through the glue will dull the edge quickly. If the body of the bridge is bent-wood, the various laminations will not all plane in the same direction, and only a very shallow cut with a very sharp edge can be used without causing damaging tear-out in the body of the bridge. Photo 9 illustrates a planing technique that can be used on bridges.

Photo 10 shows checking the contour of the bridge with a straightedge during the fine stock removal. The surface cannot be made flat along

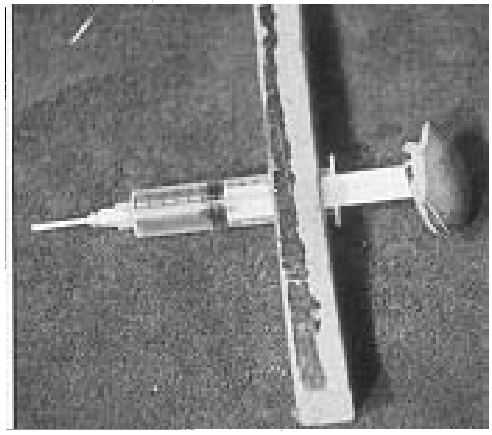

Photo 11 — Modified veterinary syringe for injecting epoxy into old bridge-pin holes.

the length of the bridge. However, care must be taken to see that the curvature is gradual. The overall shape should be convex with no sudden bumps and no dips. The new bridge-capping material is thin enough to flex to a reasonable curvature, but too much is too much, and the new glue joint can be compromised.

After the old caps have been roughly removed, the old bridge pin holes must be filled. Of the various satisfactory

Photo 10 – Checking contour of bridge top with straightedge.

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ways of doing this, I favor filling them with epoxy. This method not only completely fills the holes, but also

Photo 12 — Scraping excess epoxy from bridge.

tends to fill any other voids that may exist in the bridge body below the surface. Using a syringe device of the sort pictured in Photo 11 allows the holes to be filled from the bottom up and eliminates air bubbles in the bottoms of the holes. A #16 veterinary needle is big enough to squeeze epoxy through and small enough to fit into the pin holes. The syringe is a 12 cc veterinary syringe with a threaded tip. The threaded tip prevents the needle from popping off under the pressure necessary to inject the epoxy. The epoxy must be a type that cures very hard and is machinable. An epoxy that cures too soft will gum up the drill bit when drilling the new pin holes. When the epoxy has cured the excess may be scraped off as shown in Photo 12 .

Determining the New Cap Thickness

Making the new pinblock, fitting it into the case, fitting the plate into the case, and setting the elevations of the plate are beyond the scope of this series. There are several effective ways of accomplishing these steps and many ideas regarding which parameters should be used to set the critical dimensions. Due to physical limitations imposed by the structure of the piano, there is a fairly narrow range of plate positions that will work. This means that, regardless of the principles used to establish the fit of the pinblock and plate, the optimum locations will frequently have to be compromised. The ability to make this sort of compromise effectively, that is, minimizing the effect of the compromise on the overall performance of the completed instrument, can only be gained through experience. It is a situation where physical reality often sweeps aside elegant theory and is an example of what I was referring to with the term "process-orientation" mentioned in the introduction to this series of articles.[1]

Photo 13 — Measuring distance between sample string and top of planed bridge body.

Two of the parameters I use in setting the plate position in the piano are the string height above the keybed and the angle of the strings relative to the keybed. The optimum string heights are derived from the action. Regarding the angle the strings describe relative to the keybed, I believe the strings should be as *parallel* to the keybed as possible in order to optimize the energy transfer from the pianist, to the action, to the hammers and finally to the strings. The measurements taken between the bridge pins and the hitch pins are used to set the side-to-side and the fore-and-aft position of the plate. Even though the exact distance between the pins has been obliterated by the removal of the old cap, the number of measurements taken provide enough information to set the plate position accurately. Be sure to check the alignment of the nose-bolt holes before setting the final plate position.

Once the final positions of the pinblock and plate are set, the plate can be bolted into place with at least

Photo 14 — Preparing gluing surface of bridge body with smoothing plane from photo 8.

two lengths of fishing line per section stretched into place to provide sample string locations. At this point, with the old bridge caps removed, the sample strings should rest *above* the top surface of the bridges. Photo 13 shows measuring the space between a sample string and the top of the bridge body. One must always keep in mind that the bridge is in the *unloaded* position and the actual position in the assembled and strung piano will be somewhat *lower* relative to the plate. In any case, it is with this measurement that we *estimate* the thickness of the raw bridge capping material that will be glued onto the top of the bridge. At this point, the

actual distance that the bridge will be depressed by the downward force of the strings is impossible to determine. Different areas of the soundboard have different stiffness, and that stiffness – and thus the distance the bridge will be depressed – will differ from piano to piano, even if the pianos are the same make and model.

The new cap must be thick enough to accommodate the depth of the notching; and the notches are longer and deeper in the tenor section than in the high treble. The blank capping must have thickness that is *greater* than the measurement demonstrated in Photo 13. Since the soundboard is more flexible in the tenor than in the treble, it will be depressed more by the downbearing, and, therefore, the extra thickness in the blank cap must be greater in the tenor section than in the treble. Again, how to relate the finished cap thickness to the Photo 13 measurement can be gained only by experience. However, here are some general guidelines: if the Photo 13 measurement is less than 1/4", it is probably not enough and more material should be planed off of the bridge body. However, if the bridge is planed down to less than 13/16" above the soundboard, *front and back,* the clamping process that will be described in a future article will be very difficult. I also believe that the top of the bridge should be parallel to the plane of the strings regardless of the "plane" of the soundboard. Pencil marks may be made on the vertical surfaces of the bridge body as guides where more material needs to be removed. Remove the plate and make the necessary corrections as in Photo 9.

Photo 15 — Checking for flatness across bridge.

Let us assume that, by some quirk of fate, the previous steps have been accomplished, the plate has been bolted back in to check the results, and the Photo 13 measurement is a uniform 1/4" along the entire length of all the bridges. How thick should the blank caps be? There must be enough thickness to allow proper downbearing force, but preferably not so much additional thickness that the plate struts rest on the newly installed blank caps. Also, excessive thickness makes the process of setting the downbearing much more time consuming. However, when learning the process of bridge capping, it is best to err on the conservative side in order to avoid the sort of problem Boyd encountered in the introduction. Even if a plate bar rests on a too-thick blank cap, the cap can be gouged out to provide preliminary clearance. In the situation of uniform 1/4" clearance, a 1/2" blank cap in the bass and tenor, 7/16" in the low treble, and 3/8" in the high treble should provide adequate thickness to set downbearing. Some with experience in capping bridges may consider these thicknesses excessive, but when we get to the section on setting the downbearing, it will become clear why these thicknesses are necessary.

Once the height of the bridge body has been roughly established, the surface must be made flat for gluing. This is accomplished with a smoothing plane such as the one in Photo 8. This is a small plane with a chip-breaker and the iron ground *flat.* The iron must be very sharp and set for a depth of cut of .005" or less. Photo 14 shows the preparation of the gluing surface. In addition to checking the contour of the bridges as in Photo 10, check the flatness across the bridge as in Photo 15. The surface across the bridge must be either flat or *very slightly* hollow to make a good, uniform glue joint. Creating this surface with a hand plane takes practice. Small irregularities may be corrected with a sharp cabinet scraper.[2]

The next article in this series will cover the preparation of rough capping material and laying out the new blank cap.

Notes

1. Hohf, "A Guide to Bridge Recapping — Part I," *Piano Technicians Journal,* March 1999.
2. Hohf, "Using a Cabinet Scraper," *Piano Technicians Journal,* June 1998.

Convention 99 Kansas City

Registration Fees

	Before 6/18	After 6/18
Member:	$215	$250
Non-Member:	$315	$350
Auxiliary Member:	$75	$95
Non-Auxiliary:	$95	$115
Banquet Ticket:	$35	$35
Auxiliary Tour:	$60	$75

Applied Skills:	$25
Rebuilding Skills:	$25
Grand Regulation:	$35
Vertical Regulation:	$35
Tuning Tutoring:	$65

Watch the *Journal* for More Information on the 42nd Annual Piano Technicians Guild Convention & Technical Institute

The '98 Temperament Festival

By Virgil E. Smith, RPT & M. Mus.
Chicago, IL Chapter

One of the highlights of last July's PTG Annual Convention in Providence, RI was the temperament festival held Sunday morning. Skip Becker, RPT did an excellent job of organizing and presenting the festival. Several classrooms were combined to make a large enough room for the presentation, still practically every seat was filled; there seemed to be much interest and enthusiasm. The object of the festival was to give those attending a chance to hear and compare the same music played on pianos tuned to different temperaments. Skip and others feel strongly that many beautiful sounds present in historical temperaments are being lost today because of our widespread use of equal temperament in fixed-pitch instruments. I gathered that Skip hoped that the festival would lead to a greater appreciation and use of these other temperaments, so that more of us could enjoy these beautiful sounds not heard in equal temperaments.

In my opinion, the outstanding feature of the morning was the superb playing of Karen Hudson-Brown, RPT. Without her fine performance the festival could not have been the success it was. She played music from Bach to Gershwin, and was able to bring out the full beauty of each composition in each temperament. Still more amazing was her ability to play the same difficult music on the 7/8th keyboard without a flaw, with very little practice on the instrument. To switch back and forth between the various sized keyboards and still play each piece so beautifully was most impressive. I would not believe it possible if I hadn't seen it.

Five grand pianos were on display across the front of the room, each tuned to a different tempera-ment. The first was a new Yamaha tuned to Equal Temperament. I was flattered and honored to be asked to tune the Equal Temperament. Next was a new Walter grand tuned by Bill Bremmer in a modified Equal Temperament which he calls "The Equal-Beating Victorian Temperament." Next was a new Mason & Hamlin tuned to a Kelner historical temperament, then another new Mason & Hamlin tuned to the Handel historical temperament. The final piano was an older Steinway grand fitted with the 7/8th keyboard tuned by Paul Bailey in a Meantone temperament. It was not clear who tuned the Kelner and Handel temperaments.

The first round was between Equal, Kelner and Handel temperaments. Karen played the same Bach, Liszt and Ravel on each piano. The Bach was delightful on all three, and several of us were surprised by how lovely the Ravel sounded in the historical temperaments, especially the Handel. However, the warmth, resonance, and vitality of the Liszt in Equal Temperament was obviously lacking in the other temperaments. Evidently the audience agreed, because they voted in favor of the Equal Temperament.

The second round was between Bremmer's Equal-beating Victorian temperament and Bailey's Meantone temperament. For this round Karen played Schumann, the difficult 3rd movement of Chopin's B-flat minor Sonata and the gorgeous and also difficult Rachmaninoff G# minor Prelude. Though Karen did a magnificent performance on the 7/8th keyboard, the Meantone temperament could not tolerate some of the complicated harmonies of the Chopin and Rachmaninoff. The audience voted in favor of the equal-beating Victorian temperament.

The final choice then was between equal temperament and the Equal-Beating Victorian Temperament. For this round Karen played Bach, Chopin, Debussy and Gershwin. In this case the voting was slightly in favor of the Equal-Beating Victorian Temperament. Bill's temperament was close enough to Equal Tem-

perament that there were no unpleasant out-of-tune sounds in the performance and enough people heard and appreciated the added color to make it the winner.

In addition to the competition, opportunity was given before and between the rounds for several to comment on the various temperaments. The elaborate handout also contained further information about the various temperaments and a list of several recordings that are available in other temperaments. The entire festival was a tribute to Owen Jorgensen for his extensive research in the area of historical temperaments.

What did the temperament festival accomplish, and what did we learn from it? It was evident that there are beautiful sounds in the historical temperaments that are not being heard in Equal Temperament. While no historical temperament is capable of substituting for Equal Temperament as the normal, everyday tuning, they could provide education, greater interest, and variety of musical sound if the public were given greater opportunity to hear music performed in these various temperaments, especially music that was composed in these early temperaments. It is obvious that all music is not successful in the early temperaments, although some would claim otherwise, but all music is successful in Equal Temperament, even music composed in earlier temperaments. The final vote would seem to indicate that many would like a better alternative to equal temperament; only time will tell if Bill Bremmer's temperament is that alternative.

Musicians working with fixed-pitch instruments such as the piano in the 19th century became frustrated with the limitations of the early temperaments. Variable-pitch instruments were finding many ways to bring variety and excitement to their music that those with fixed-pitch instruments could not duplicate with the temperaments then available. Melody was an important part of romantic music, and melodies were made more exciting with such devices as raising the thirds and seventh degrees of the scale and flattening "flat six" still more. Other tonal possibilities included notes with or without vibrato and when more than one instrument was involved, intervals with and without beats. Of course, all these devices were equally possible in all keys.

Equal Temperament was found to be the best solution to the problem. It could not duplicate every device exactly, but it could relate to many of them very effectively, and of course, perform equally well in all keys. It couldn't alter melodies to make them more exciting, but octaves tuned beatless to all expanded 3rds greatly improved the upper melody line. Vibrato was impossible, but all intervals except the octave beating consistently gave a similar exciting effect. It couldn't provide pure, beatless intervals except the octave, but all neighboring intervals beating at roughly the same speed gave a smooth, pleasant sound in all keys. It didn't have key color based on interval beat speed, but it still had key color based on key relationships, the more sharps in the key the brighter the sound, the more flats in the key the darker the sound. Though each key had its own distinct color, interval relationships were alike in every key; making modulation or transposition to any key possible and the use of unrelated keys in a single composition possible. In addition, a fine Equal Temperament tuning produces resonance, life and vitality in the sound that was lacking in the earlier temperaments. The tone seems to have a greater singing quality.

While it is true that some of the lovely sounds of the historical temperaments are missing in equal temperament, Equal Temperament has so many other advantages that it is still the best qualified to meet all the demands of today's music world, in my opinion. However, historical temperaments do have much to offer in tonal variety and education, and their continued use should be encouraged. Bill Bremmer's temperament also may inspire experiments with other temperaments that also can contribute to our musical enjoyment. Let us hope that the '98 temperament festival in Providence stimulated much interest in temperament tuning for fixed-pitch instruments.

Controllable Steam Voicing

By Roger Jolly
Calgary, Alberta Chapter

Most of today's pianos incorporate very dense hammers. There is very little elasticity in the shoulders, combined with—in many cases—minimal factory voicing. These factors result in excessive percussion, exaggerated V-bar noise and a longer hammer/string contact time, giving poor singing quality and poor sustain.

The traditional method of dealing with these hammers has been to deep-needle the shoulders viciously, with as many as 20 or 30 shots, depending on the manufacturer and the quality of hammer. I have found these results to be quite mixed and very time-consuming. Over the years, working with these hammers has led to frustrations for many of us. Tough solutions for tough problems were required: water and alcohol application to soften the felt; it works, but distorts the shape of the hammer too much for my liking. Swinging the hammer into a jet of steam works quite well, but it is a risky procedure and is not very controlled. Squeezing the sides of hammers with pliers opens up the shoulders quickly, but curls the edges of the hammers in the treble sections, and is not of much use for subtleties. Many a set of hammers has been ruined by too much of a good thing.

The challenge was to find a method that was controllable and could be done at the piano with the action sitting in your lap, in the same manner as traditional voicing methods. The results needed to be long-lasting with a good tone pallet, going from a warm, rounded sound that still sings at *ppp*, to a bright and slightly "edgy" sound at *fff*. Finally, since many pianos that need this treatment are in the budget-conscious price range, a fairly time-effective solution was needed. I believe that the steam voicing procedure described here is the best solution to the problem.

Tools required are as follows:

1. 40-watt Weller soldering iron with brass voicing head.
2. 10" voicing block.
3. 12" x 4" piece of linen (white).
4. Five-note voicing block.
5. Needling tool.
6. Strips of 120 and 220 grit sand paper, 1/4" wide.
7. A small bowl of water.

The voicing iron has been shaped to follow the contour of the hammer. Inverting the iron will enable you to target and localize the steam very accurately, thus relieving tension in a small and controlled area—so think upside down! The voicing block is very important to make sure that an equal amount of pressure is applied from note to note to ensure an equal amount of steam. Significant downward pressure is required to brighten the tone when the iron is used, hot and dry. White linen is used, unless you intend to dye the hammers another color. A tip for beginners: draw a straight line down the center line of the cloth with a ball point pen, so you can align the strike point or shoulder area of the hammer with accuracy.

Steam voicing is not so very different than the traditional method of voicing with needles. To reduce the volume, target the shoulder at 10 to 11 o'clock, and you also will obtain more variation in tonal color throughout the dynamic range. Steam on or near the strike point will affect the impact tone and the muting effect (due to hammer/string contact time), just like shallow needling high on the shoulder and sugar needling on the strike point.

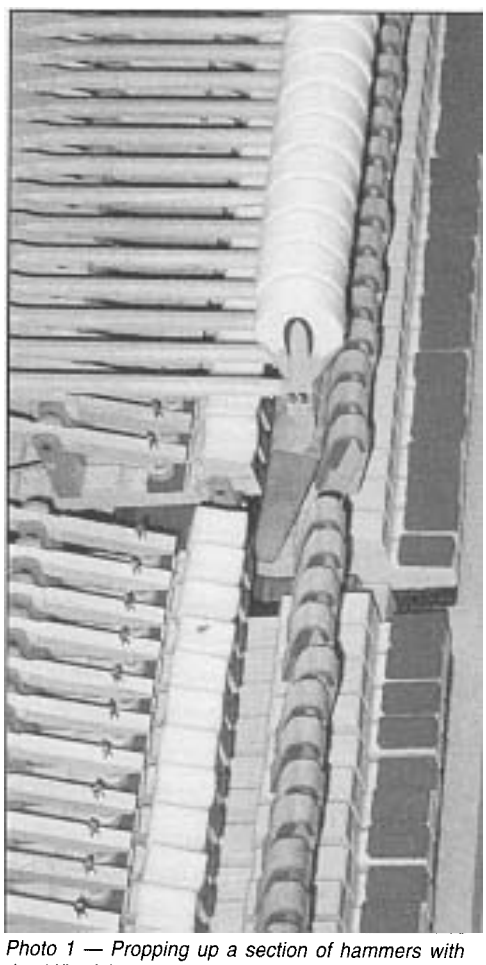


Photo 1 — Propping up a section of hammers with the 10" voicing block.

Basic Assumptions

Several assumptions will be made before getting started: the piano is well tuned; strings have been seated to the bridges to remove false beats; hammers are mated to the strings to eliminate out-of-phase unisons; and the action is well regulated. Hammers need to be in good condition and should be filed for correct shape. However, minor grooves can be "popped out" by steaming. Experience with this technique can save time, as well as wear and tear on the hammers. It is not possible to do a good voicing job unless all of the above conditions are attended to.

Photo 2 — Applying a controlled burst of steam to the upper shoulder. Note firm downward pressure on shanks.

Evaluate Tone & Condition

Now we are ready to evaluate the tone and condition of the instrument. Our aim and primary objective is to end up with a well-balanced and evenly voiced piano. Each of us will have a different concept of "What is ideal tone?". Voicing sample notes in each octave with the client sitting with you aids in establishing his/her tastes, and is a wise procedure as it avoids dissatisfaction at the end of the job.

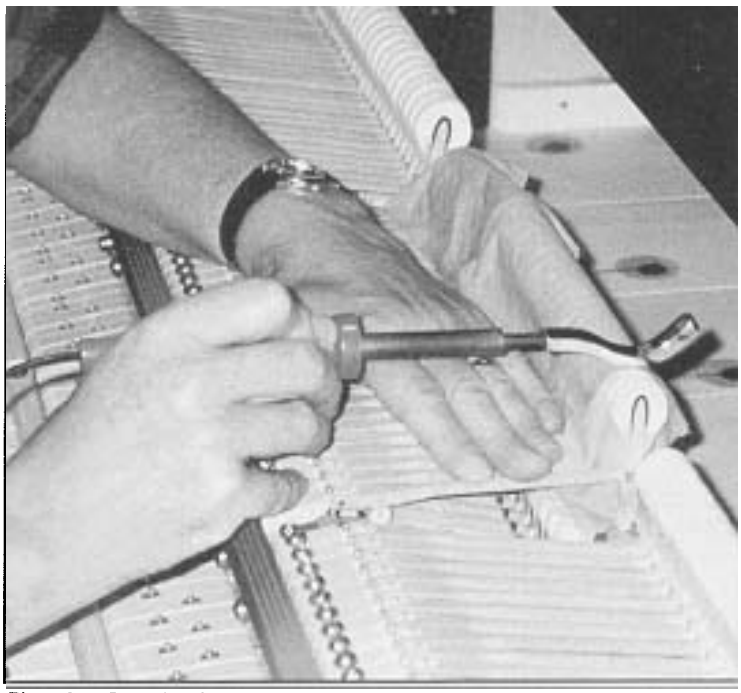


Photo 3 — Steaming the striking point to eliminate percussion and V-bar noise.

First, run chromatic scales the full length of the keyboard, making notes on the main problem areas. Second, run octaves from the center of the keyboard to C88; the upper note should sit "on top" of the lower note, but not scream through or be dominant. From the center, play descending major triads, through to the bass wound strings, all three notes should sound even, if in doubt play each note in sequence to find the notes that stand out. I find this test to be fairly foolproof through the bass tenor break. Finally, play the third partial for all the bass notes (octave + 5th), check for blend and balance. If you run this test on all voicing jobs, you will find that customer satisfaction will increase significantly.

Voicing Procedure

Let's get started. Wet the linen cloth and wring out so it has no excess moisture. Prop up the center section of the hammers with the 10" voicing block (see Photo 1), drape the damp cloth over the hammers, and, using the voicing iron in the inverted position, hit the high shoulders with a burst of steam (see Photo 2). Slide the action back into the piano and check for changes; at this stage you are looking for a generally even volume of tone. Some notes in this section may have a percussive edge to them (metallic-sounding). Prop up the offending hammer with the short block and give a very short touch of steam with the back of the iron at the strike point (see Photos 3 and 4), then recheck your results. If you consider the section fairly even, prop up the hammers with the 10" block and quickly dry-iron the section, right over the shoulder and strike point (see Photo 5). It will brighten the tone a little bit. I have found that it stabilizes the job, but it also will cause some very bright notes to appear. Fix them now—it saves on callbacks.

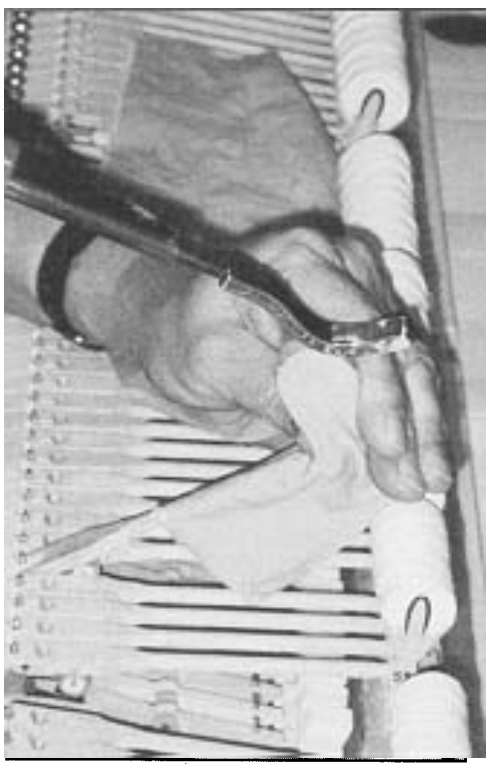


Photo 4 — Touching up an individual note.

Photo 5 — Dry-ironing a section to stabilize and brighten.

When the tenor section is satisfactory, you can move to the first treble section. In general, I find that this section needs less steam and more work closer to the strike point, due primarily to V-bar noise. A quicker pass with the iron will inject less steam, but remember, there is less felt on the hammers as you move up the scale, therefore less contact time is required to obtain quite drastic results. Slide the action back, check the balance by playing the octaves with the notes in the center section and correct as required. Dry-iron the hammers again. Run chromatic scales through the two sections to look for any stand out notes at *ppp*, *mf* and *fff*. Correct any minor problems with needles in the traditional manner. The softening of the shoulders achieved with steam on this type of hammer makes the finish voicing with needles much easier. Repeat the procedure in the top section.

The bottom six notes of the tenor section and the entire bass section generally take most of the attention. The reason that I favor using major triads

Continued on Next Page

Controllable Steam Voicing

Continued from Previous Page

for voicing in this section is that this is the area of the piano where most chords are played; hardly rocket science to be using the same approach. Prop up the first few bass hammers with the narrow block and iron with the curve downward following the contour of the shoulder and over the strike point as shown in Photos 6 and 7. Usually, I just do two notes across the break first and check the blend of the major triad with the two notes in the tenor. If the blend is correct at all three dynamics levels, just continue to the bottom.

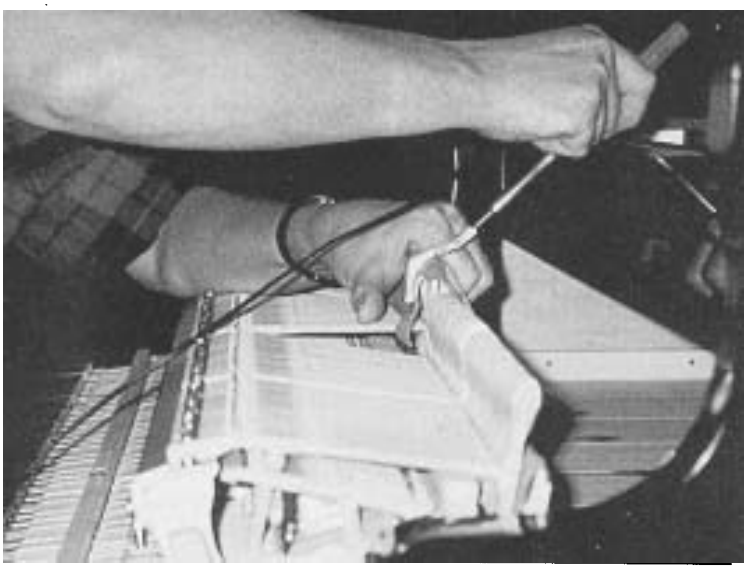
Finally, check string/hammer mating after dry-ironing the entire piano, and correct as required. I have found that warm dry-ironing as the last operation results in very few bright stand-out notes on later visits. With the hammer well supported, it is surprising how much a hammer can be voiced by using a fair amount of downward pressure with the iron.

Vertical Pianos

The same techniques can be used on vertical pianos; one of the advantages is that the action does not have to be removed and it is very fast. The curve of the voicing iron makes it easy to get at the underside shoulder.

Steaming Vs. Reshaping

On newer pianos in university usage, I have been very lightly steam-ironing instead of light sanding. Preliminary indications seem to show that it will "pop" the grooves out and just take the harsh edge off the tone quality. The cloth is barely damp and it is a quick pass with the iron. Felt is remarkably resilient, so springing it back to its original shape makes sense. Reshaping removes mass and has a big impact on touchweight; remember, one gram of lost felt is five grams lighter at the front end of the key. Reshaping also cuts the hammer down to denser felt, increasing the need to needle. It is also my belief that far more compression than wear takes place in normal hammer felt. I have closely observed two Yamaha C3's over a three-year period in heavy usage. With steam voicing, no reshaping has been required and the tone quality is excellent.



Photos 6 (ABOVE) & 7 (RIGHT) — Steaming hammers with curve of iron downward.

Measuring the Results

To give some indication of how effective this approach can be, I have tabulated results of a new set of hammers and shanks that were hung on a Yamaha C3 grand (Table 1). I measured the results with a Reyburn CyberTuner. Note the improvement of sustain of the various partials as well as the amplitude. This was by no means the finished voicing job, but it only took 10 to 15 minutes to change the piano quite dramatically.

A set of new hammers was chosen to try to illustrate how dramatic the effect can be with only 20 minutes of work. Note how the partials build to give a fuller tone with sustain and an increase in power. The explosive, percussive "splat" is gone.

I would like to thank Dean Reyburn and Don Rose for their assistance in helping to overcome my "finger troubles" with my new RCT Windows. This tool is a real help for any technician doing a high degree of grand work. Its diagnostic capabilities in the area of partial development make it a unique tool.

Table 1 - Voicing results on new hammers for a C3

		Before		After	
Note A1	Partial	Sec Sus	Vol Unit	Sec Sus	Vol Unit
	1	0.56	0.34	2.79	1.65
	2	3.72	8.84	4.46	7.07
	3	3.53	8.40	4.60	10.51
	4	4.27	8.84	4.45	7.44
	5	4.09	4.22	4.09	8.50
	6	4.09	11.43	4.01	9.24
	7	4.09	5.67	3.33	2.66
Note A2	Partial	Sec Sus	Vol Unit	Sec Sus	Vol Unit
	1	5.02	7.85	5.06	4.53
	2	5.94	13.04	5.94	10.79
	3	5.94	13.39	5.41	10.62
	4	5.94	7.45	5.94	20.61
	5	5.94	11.92	5.94	12.15
	6	5.94	9.80	5.90	20.61
	7	5.94	5.90	5.90	10.00
Note A3	Partial	Sec Sus	Vol Unit	Sec Sus	Vol Unit
	1	5.94	10.39	5.94	12.00
	2	5.94	16.59	5.9	16.21
	3	5.94	5.19	5.94	11.44
	4	5.94	6.88	5.94	8.72
	5	5.94	5.86	5.94	4.80
	6	5.94	5.65	5.94	4.80
	7	5.94	5.76	5.94	9.00
Note A4	Partial	Sec Sus	Vol Unit	Sec Sus	Vol Unit
	1	4.46	11.26	4.46	15.36
	2	4.04	4.26	4.32	13.28
	3	4.32	4.60	4.46	9.03
	4	2.51	1.76	4.04	3.90
	5	3.48	2.33	3.90	5.71
	6	3.76	1.95	3.62	4.89
	7	2.65	1.84	3.90	2.01
Note A5	Partial	Sec Sus	Vol Unit	Sec Sus	Vol Unit
	1	2.23	3.32	2.23	10.28
	2	1.76	0.84	1.86	4.67
	3	1.02	0.71	1.95	4.22
	4	1.30	0.86	1.30	3.78
	5	0.56	0.15	0.30	4.46

The End of an Era

A Fond Farewell to a Landmark Educational Program

By Robert Goodale, RPT
Las Vegas, Nevada Chapter

Burrowed among countless acres of corn, barns and livestock, Sioux City, Iowa, sits at the crossroads of three states and the Big Sioux and Missouri Rivers. Such a setting is an unlikely location for one of the most respected piano technology schools for more than 30 years. Western Iowa Tech Community College, or WIT, was home to an accredited educational program that began many successful piano technicians' careers. Recently, as a result of changes in budgets, enrollment and a new generation of objectives, the administration of the college determined that it was time for the tradition to end.

According to the Western Iowa Tech administration, an estimated 363 graduates completed the program throughout its 30-year history. Many students came from great distances to attend including: Canada, China, Thailand, Venezuela, Arizona, California, Colorado, Connecticut, Florida, Hawaii, Indiana, Iowa, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Missouri, Montana, Nebraska, New Jersey, New Mexico, New York, Oklahoma, Oregon, Pennsylvania, South Dakota, Tennessee, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin and Wyoming.

The program began in 1968 when a local dealer observed a desperate need for piano technicians in the area. The need was addressed to Western Iowa Tech where Robert Erlandson, RPT, submitted plans to develop a piano technology school. Erlandson went on to become one of the most successful leaders of the program, at one point having as many as 30 students enrolled during a single year. Several instructors have headed this program, the last of which was Doug Neal, RPT, who alone saw the graduation of 130 students during his 15-year leadership. Other former instructional leaders included Derek Hill, Frank Chiarello, Wilbur Rhubottom, and occasionally Dave Napier.

The Western Iowa Tech program was divided into two one-year options. First-year students were introduced to basics of piano technology, tools of the trade, beginning tuning theory and practice, basic action repairs and troubleshooting, nomenclature, and piano anatomy. Grand and upright action models were used in a classroom setting with formal instruction accompanied by video presentations. Numerous acoustically dampened rooms were provided, featuring various types of pianos for study and application. Upon completion of this phase, students had the option of receiving a certificate of completion or sustaining a second year for an associate degree. Subsequent students would then continue training in aural tuning toward perfection, while concurrently learning about piano rebuilding.

The WIT shop was equipped with a number of divided work stations where students were able to set up their own mini-shops. Several large work benches and tables were located throughout the facility and heavy stationary shop equipment was provided. A spacious and fully equipped high- and low-pressure spray booth facility for refinishing was located down the hallway. Working in pairs, students were to break down a grand piano, strip and refinish the case, repair the soundboard and bridges, replace the pinblock, rebuild the action, recover and rebush the keys, overhaul the dampers and then restring the piano. Complete regulation and voicing followed, resulting in a fully functional and rebuilt instrument. By the end of the second year, students were ready to begin preparing for the RPT examinations.

The regional PTG chapter meetings also were held in the Western Iowa Tech shop, providing students with a formal introduction to the Guild. Often chapter members were allowed to examine student work, followed by supporting and appreciated critiques. Schedule permitting, a respected guest speaker would sometimes visit to share some additional knowledge. If possible a field trip might be arranged to visit a private rebuilding shop, to attend another chapter's meetings or perhaps to learn about some of the early keyboard instruments at the nearby Shrine to Music Museum in Vermilion, South Dakota.

Continued on Next Page

The End of an Era

Continued from Previous Page

Students also enrolled in a small business management class, as well as other classes outlined by the college. If a student had previously attended another college or university, some or all of any accredited and transferable work could be applied. Being largely a vocational institution, students could also enroll in classes from other programs that complemented their education, for example, machining, carpentry or computer applications. The school also boasts a complete accredited band instrument technology program.

Former program director Doug Neal, RPT, has relocated to sunny Florida where he happily continues to work on pianos for a local dealer. His parting thoughts are as follows:

"The wonderful individuals who came from around the world to study piano technology at Western Iowa Tech Community College made going to work each day an enjoyable experience for me. The 15 years I taught piano technology at WIT represent a blessing in my life. I am somewhat introverted, and I do not often communicate my feelings but know full well that the students I spent time with are now a part of who I am. I may never tell them directly, but each day I think about those wonderful people and pray that life is good for them.

Stay Happy,

— Doug Neal, RPT"

WIT Alumni Remember ...

"I attended the Western Iowa Tech Piano Technology program in 1972 and graduated in August, 1973. I have many fond memories of this year in my life; the classmates I attended class with, and our incredible instructor, Bob Erlandson. This program gave me the knowledge to start a piano-service business in Kansas City in 1974. Since that time, my career has taken several turns and I now find myself working in Piano Service for Yamaha Corporation of America. My education at Western Iowa Tech has served well as the foundation of my piano technical knowledge. Thanks for being there, Western Iowa Tech."

— Bill Brandom, RPT
National Piano Service Manager, Yamaha Corporation of America

"My reason for attending WIT was to speed my career development. I'd gotten my start in tuning with Owen Jorgensen at Michigan State, but after a couple years of day jobs I realized I wasn't comfortable charging money for doing all those other things that need to be done on what amounted to an on-the-job-training basis. I knew I didn't know much about regulation or repair and certainly nothing about rebuilding and refinishing. In the span of a year the members of the class rebuilt an upright and a grand, usually in teams of two. The trouble-shooting skills developed in the process of a rebuild or two, and looking over the unique problems encountered by other teams were, I felt, equivalent to four or five years of fumbling about on whatever pianos I might have encountered out in the real world. I am proud and thankful to be a Western Iowa Tech graduate."

— Conrad Hoffsommer, RPT
Luther College, Decorah, Iowa

"All of us who have ever been associated with Western Iowa Tech have been truly saddened by the news that WIT has discontinued the Piano Technology program. Indeed, everyone associated with the piano industry should consider this closing a great loss to all of us. I personally feel the success of my career is due in part to the valuable training I received there, training I just could not have received had the program at WIT not been there."

— Gracie Wagoner, RPT
Secretary-Treasurer, PTG

"My experience at Western Iowa Tech was a window of opportunity, a stepping-stone in the process and development of my career as a person in the piano industry. Doug Neal is the man that recognized my needs as an individual and made it possible for me to be a part of the program. I have significant respect and appreciation for the time and the guidance that Mr. Neal gave to me as a professional and as a friend. The experience that I encountered at Western Iowa Technical Community College was time well spent and it was the beginning of a rewarding career as a piano technician."

— Kevin Stock, RPT
Concert Technician, Steinway & Sons

"The longer I work in the field of piano technology the more I appreciate the benefits I received from attending WIT. I am realizing that the well-rounded training we received, discussions of differing opinions and techniques, and the emphasis on ethics toward customers and fellow techs are much harder to come by in the real working world. In addition to conveying a huge amount of information, Doug Neal extended his friendship and took an active interest in all of his students' future careers. It seems he has been involved in or assisted in most of the opportunities I have had since leaving WIT. The time I invested at WIT continues to repay me in all aspects of my career. Thank you Doug!"

— John Gottschalk, RPT
Phoenix, AZ Chaptr

"I started at Western Iowa Tech in August of 1972, two months after graduating from high school. At the time I thought piano tuning would be a good way to earn money while going to college, where an education for my real vocation awaited me. By the end of the program I had discovered that I had begun a lifelong love for these contraptions of iron, wood and felt, and that there was no way even a master technician and superlative teacher like Robert Erlandson could teach anybody everything they needed to know about piano service in the time the course allotted. But Mr. Erlandson had wisely stressed those skills most likely to be needed by fledgling piano technicians, and in my case, and those classmates I've kept in touch with, Mr. Erlandson was right on the money. The education I received at WIT proved to be the perfect start for the very rewarding and interesting career I've enjoyed for 27 years so far. By the way, in spite of several years of college, I never did find out what my real vocation was. I have been having so much fun with the one I'm in, the importance of looking for another seemed to fade."

— Mark Wisner, Associate PTG Member
Yamaha Corporation of America

"The reason the program at Western Iowa Tech was such a positive, rewarding and valuable experience for me is because of Doug Neal. His talent at "setting the table," and allowing each of his students the freedom to learn in their own unique way, made this introduction to piano technology a rich experience. I personally want to thank him for his generosity, integrity and thoughtfulness. Because of the accurate information and solid foundation that he provided, my career was accelerated far beyond my hopes. Thank you Doug, you will be missed."

— Ted Mulcahey, Associate PTG Member
Concert Technician, Steinway & Sons

"I feel very fortunate having attended this institution. My career would not be where it is today had it not been for the experience. It was the perfect environment to learn and to work with other students who have the same interests. Quite literally I could feel my skills improving daily. Western Iowa Tech provided a foundation of confidence and advocated a philosophy to pursue the highest standards of quality. Mr. Neal was a wealth of information. He was a natural as a class instructor and was always willing to assist on a personal level. I formally thank Mr. Doug Neal and Western Iowa Tech for a job well done. A fond farewell to the end of an era in piano technology education."

— Robert Goodale, RPT
University of Nevada, Las Vegas

By David Patterson, RPT
Toronto, Ontario Chapter

The Bartolomeo Chronicles

Bartolomeo Explores Tone

Bartolomeo joins many other technicians in experiencing a wide disparity between the romance of those exhilarating voicing classes and the reality of Monday morning — back to the grind. He waits patiently. But nobody ever seems to ask him to perform this glamorized task; when it does come up, he usually ends up absorbing the labor costs or combining it into some higher-perceived-value procedure. To gain experience, though, he uses a technique that allows him ongoing training, gives him wide variety and even breaks up the routine of the service call.

The poorest-sounding note is selected on each piano, typically in the difficult area around the tenor/treble break. Comparing all notes by playing semitone runs, the worst note is isolated and then played repeatedly between its two neighbors until the sounds are memorized. A procedure is performed on the objectionable middle note. Then the three notes are again played. Because the worst one had been selected to experiment on, it is now easy to hear any improvement. Hopefully, it sounds better afterward than the two adjacent keys.

Bartolomeo finds himself getting into trouble when he thinks of voicing as a hammerhead issue. At the piano, he considers voicing to be anything that involves tone. Thus, he may be required to do any one "voicing" step at any time: tighten flange screw, replace center pin, square hammers to strings, tighten plate screws, raise pitch, tighten keybed screws, clean out bridge termination points, clean string corrosion or residue, remove obstacles or debris against the soundboard, stress the wire strings, regulate, twist bass strings, reconsider bass and treble tuning, card hammer sides, wipe the strings with alcohol, tap down the strings, or ... needle hammers.

Through environmental conditioning, Bartolomeo finds himself fixated on tuning. It's the way of the world. He works to break free of this technician mindset by seeing the piano through the eyes of the player or piano owner. Although clients may not know what voicing is, and cannot articulate these three divisions, in general they still care equally about tuning accuracy, regulation/feel/touch and voicing/tone.

In striving to achieve the highest quantity of actual results, the three-sided glover's needle is a godsend for Bartolomeo. So many of the hard hammer sets used on modern vertical pianos require hundreds or thousands of needle perforations using the traditional "sharp" needles. The vicious-looking but practical glover's needle can reduce the effort and time while increasing bottom-line tone improvements. He inserts it fully whenever possible but uses caution, remembering that it actually can slice through the tiny fibers, rather than just separating them. If a hole is left after penetration, he receives a clear signal: do not expect magnificent results from this overly hardened felt.

When he gets permission to overhaul and regulate a piano or its action, the steps that most radically affect the result are routine procedures in the voicing category. That is to say, they are not customized at all; every piano receives exactly the same treatment. The priority items on a result scale would be: 1) with the piano in tune, pushing hard and repeatedly against the wire strings from end to end for tone prolongation, 2) hammer shaping, 3) cleaning reachable wire strings to showroom condition, and 4) needling for sustain at 90 degrees to the molding. Through these alone, the sound already is dramatically improved in the fifth and sixth octaves.

Clients are the final authority on the tone of their own pianos; if need be, they are the only authority. Bartolomeo is there to serve their needs. Consequently, his expertise ends when the tone subject begins. He is keenly interested in what they want. He will never make wholesale changes to the tone of a piano unless first gaining consent. In this way, he is able to avoid the crushing, ignominious and painful fate of having to balance the piano on his own head at the owner's insistence.

Obviously, exotic repairs or unproven techniques of any kind are never undertaken on a customer's piano.

Next month, Bartolomeo declines to pull out his hair.

You Might Need to Burn Down a Piano

By Anita Sullivan
Feature Writer

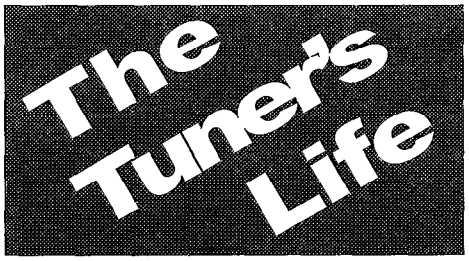
The house I rent has one of those automatic garage doors. Every now and then the door takes a notion to change the normal order of things. It tries to go up when it already is up, or down when it already is down. Its dinky, beady little control mechanism is no longer large enough to encompass the fuller vision it has amassed within itself. So, it goes halfway down and reverses. Or goes halfway up and reverses. The cure is not mechanical, it is visceral. I kick the controls. They wobble a little, the light stops wildly flickering, and the door, not defeated, not crushed into submission, merely takes a new notion. Its former reality now seems like a brand new way of doing things. Refreshed from its brief expedition into a parallel world, the door returns to this one, thinking, I would suspect, that it has been away for a thousand years.

"When in doubt, kick the controls!" is the philosophical principle I have derived from this exercise. Now I can once again hop into my car full of piano tuning tools and go off to work. Taking a hint from the garage door, I have tucked into my toolkit a book of matches: behind the small plastic hygrometer, next to the autopsy knife, the old toothbrush, the gimlet, the pin vise, the jeweler's screwdriver. It is an old, limp cardboard folder with only about three matches left, which wobble on their little sticks. They have been in there a long time, unemployed.

Their pyrotechnic capabilities are — to put it politely — probable rather than actual. Maybe even virtual. Nonetheless, that little book of matches makes me feel good. It makes me feel valid and competent and very likely. After all, with three limp matches and a good enough cause, I could burn down a piano. You never know when you might need to in this line of work.

Normally, I would use matches on an old piano to bend hammer shanks when they have gotten out of alignment and started to bump into each other. Old wood can become flexible if it's gently heated and can be teased into leaning. But the matches have potential for more. They can bail me out, just by being there. More subtle than an axe, and far less likely to be used.

But when piano after piano sits lumpishly on its square of carpet and refuses, after two hours of tuning, to take that huge, if temporary, leap from ugliness into beauty; when it continues to send tinny, harsh, inharmonic sound waves out into this world; and when my very profession, not to mention my poetic soul, is dedicated to the reduction of ugliness by restoring harmony one piano at a time — then sometimes I have a vision of a certain piano as the center of a bonfire in the backyard. "I could do it!" I say to myself, casting a mental glance into the black toolkit on the floor, where the matches nestle inside their inside pocket. "I could just push the piano out the back door. I could just kick it off the porch, Boing! Boing! Boing! Then I could take out my little book of matches and strike one and hold it up to the music desk. Ha! Ha! Ha! Yes I could. The only thing stopping me now is self discipline."



Wait a minute, who am I kidding? Isn't this kind of thinking useless, maybe even dangerous? After all, several delicate peace agreements have just been negotiated in the world. And here I am advocating the kicking of garage door thingies, the possible burning down of a piano.

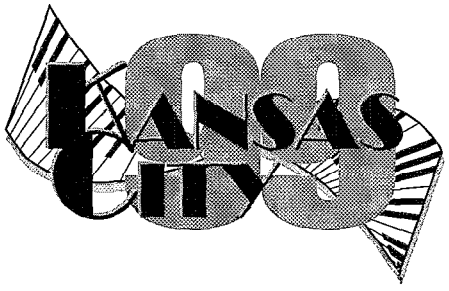
Well, I could say "it's all symbolic." But I cherish these small and foolish powers of destruction, because they help me maintain harmony in my life (if not in certain pianos). "Harmony," which is now a noun, started out as a very tough and practical verb used in building rafts or houses. It meant "to lash together" — pieces which would normally fly off in all directions. "To lash" — not "to smile," or "to go 'la! la! la!'" This means harmony is street-wise; it has the power and authority to jump in at the point where things are self-destructing, to straighten out a few bones. Harmony is temporary, and not always nice, and this gives us a strange kind of relief.

We need not be totally reconciled. We can be smoothed, sweet-talked and loved, but when ugliness pokes its head up one time too often, then we reach into the old kit bag, pull out whatever is our own version of this secret power of dis-satisfaction and do a bit of — harmonizing.

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

Reach For It! — In Kansas City

As a young child, you take up the piano. You practice diligently and over the years you may even win awards of distinction. But as many of us know, when approaching the advanced stages of piano playing, it can be frustrating if your fingers cannot negotiate wide intervals. Hands get tired reaching for the wide interval, perhaps not reaching the interval, and sometimes suffer maladies such as tendonitis or carpal tunnel syndrome. (And of course it's a truism that you must have large hands and long fingers to be a serious pianist.) Well, how about trying on some larger hands? You had a chance to preview the D. S. 7/8 Keyboard last summer in Providence. This year, you'll have the opportunity to experience owner David Steinbuhler's class demonstrating how you can market this remarkable innovation to your customers. You might even want one for yourself! Many instruments have been redesigned to be more ergonomically friendly for smaller hands. Why not the piano? Now read about the lives changed by this keyboard transformation.



Seven-eighths keyboard owner Linda Gould writes: "Sight-reading probably has the most dramatic effect. When you are sight-reading difficult music (especially with other chamber musicians), you do not have time to work out the easiest way of playing a passage. I have found on a regular size keyboard I can last about an hour and then my hands and arms start to feel tired. If I persist, within about 20 minutes I am in pain and must stop. Playing similar pieces on the D. S. Keyboard, I can sight-read for over two hours completely pain free. I can play large chords, octave passages, leaps, huge dynamic ranges and my brain fatigues long before my fingers or arms."

Writes Christine Purvis, in a letter to *Clavier* magazine: "Playing through all the repertoire I have loved to play for the past twenty-five years, I was able to play without leaving out notes: the full harmonies, voicing chords with ease, and bringing out inner lines that I never could before."

A November, 1997 article in the *Wall Street Journal* chronicles an ongoing search by diminuitive five-foot-tall pianist Hannah Reimann, for a smaller keyboard to meet her needs: "Ms Reimann says the current octave width – at 7 1/2 inches, at least a quarter-inch wider than it was in the early 1800's – disproportionately frustrates women, children and people of small stature. 'My teachers promised I would grow into it,' she says. 'I never did.' Today, after years of stretching exercises, she can just reach a 'ninth,' or the eight-key octave plus one. She was taught to stay away from the Rachmaninoff piano concertos she loves." But now, with her interchangeable 44-inch keyboard in place, "Taking a seat and flipping her long auburn hair behind her, she pauses a moment, her tiny hands with their unvarnished finger nails poised above the keys. Suddenly they explode in a complicated crescendo of octaves. 'Now I can play anything,' she says, 'Even Rachmaninoff.'"

After performing on the D. S. Keyboard last summer in Providence, pianist Karen Hudson-Brown had her 1926 Steinway A retrofitted with a 42-inch keyboard. Writes Ms. Hudson-Brown in a letter to the *Piano Technicians Journal*: "Many people, when presented with the idea of a smaller keyboard, say with astonishment, 'Why of course! Why hasn't someone done it before?' Well now someone has. It is an option."

Come and see for yourself this summer! Reach for it, in Kansas City!

— John Ragusa, RPT
1999 Institute Director

Sunday Morning in KC

Cybercafe and Business Roundtables

On Sunday from 8:30-noon there will be an exciting event for computer fans: the Cybercafe. Many technicians consider the computer to be one of their most valuable tools, and at the Cybercafe you'll have the chance to get hands-on assistance with a wide range of computer topics.

Grab a cup of coffee and a pastry from the breakfast cart and sit down at a table with a computer and an instructor. Choose your subject—there will be stations for word processing, financial software, customer record-keeping and desk top publishing. Tuning software and scaling software will be demonstrated, as well as the new Palm III. Surf the Web for the first time, or learn the fine points of e-mail etiquette. We'll even have a demonstration of the new computerized index of the *Piano Technicians Journal* from 1946 to the present.

Instructors at this year's Cybercafe include: John Baird, Ron Berry, Frank Emerson, Mitch Kiel, Dave Lamoreaux, Nancy Lamoreaux, Dean Reyburn, Andy Rudoff, Bill Springer, Ron Torrella and Alan Zajicek.

Continued on Next Page

Volunteers Needed for Visually Impaired

The committee for the concerns of visually impaired technicians is looking for volunteers to be of assistance to sightless technicians who will be attending the 1999 PTG Technical Institute. Perhaps the two things, which might appear most formidable to the sightless technicians who is considering attending the convention, are getting to the right room at the proper time and touring the exhibit hall.

If you are interested in being of assistance, we offer you this opportunity to make the 1999 Convention more enjoyable and meaningful to a colleague and make a new friend in the bargain. If you know that you will be attending the convention in Kansas City and are interested in assisting, please contact Committee Chairman Richard Hassig, 2310 N. Ohio Ave., Davenport, IA 52804. Telephone 319-386-4084.

Other members serving on our committee are: Lorne Buntemeyer, Lawrence, KS; Roy Escobar, Houston, TX; and Don Mitchell, Vancouver, WA.

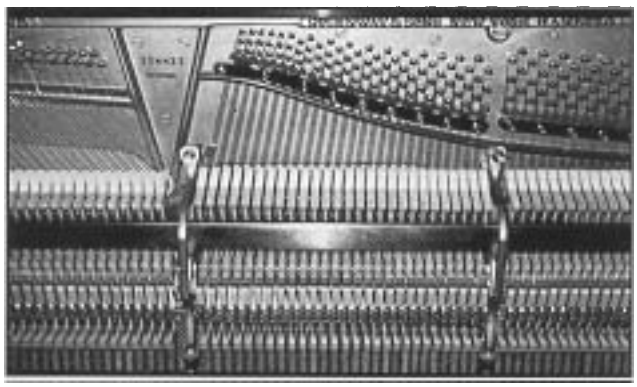
If any of these gentlemen is a friend of yours and you would like to discuss this concept with them, please do so.

I am not into e-mail as yet. If that is your preferred means of communication, please contact Sandy Roady at the PTG Home Office at sroady@unicom.net.

— Richard Hassig

Piano Rebuilt as Travis Memorial

This month our cover is adorned by the action of 1911 Steinway model K ebonized 52" studio upright piano, serial number 118837. This piano resides in the choir room at Wallace Memorial Presbyterian Church in Hyattsville, Maryland, located just outside Washington, D.C. This church is the place of worship for Genevieve Travis, wife of the late John Travis, RPT, the well-celebrated and beloved member of the Washington D.C. Chapter, PTG. Indeed, John's "A Guide to Restringing" is considered one of the bibles of piano technology. As a fitting memorial to John, the Travis family recently donated the restoration of this Steinway to the church, with John's son Michael Travis, RPT serving as liaison between Genevieve, the church, and the rebuilder, David G. Hughes, RPT, of the Baltimore Chapter, PTG.



The piano was completely remanufactured, receiving a new soundboard and bridge set, strings and tuning pins including rescaling of the bass/tenor area, total action part replacement, keyboard restoration, exterior hand-rubbed satin lacquer case refinishing and full climate-control system. It was decided that since such a large percentage of the parts of this instrument were to be replaced, the pristine original plate finish should be left intact as a memento of the piano's initial grandeur.

Temporarily transported into the sanctuary Sunday, January 24, 1999, the piano had its dedicatory recital under the hands of Charlton Meyer, performing Sullivan's "The Lost Chord" and was very well received.

— David Hughes, RPT and Michael Travis, RPT

Sunday Morning in KC

Continued from Previous Page

Another great option for your Sunday morning is the Business Roundtables, from 10:30-noon.

Sometimes what we learn in the informal conversations with other technicians can make an entire convention worthwhile, such as getting some advice on a vexing business problem. In Kansas City, we're providing a way to make sure this can happen — the Business Roundtables. These structured yet informal conversations with your peers will take place on Sunday morning, when you can join a small group of technicians to discuss a topic of vital interest to your business. Each discussion will be facilitated by a technician who's knowledgeable about that topic.

Here's how it works: in one of the large classrooms there will be 10 round tables with a facilitator and a sign at each one, indicating the discussion topic for that table. When you arrive at the classroom, simply sit down at the table of your choice to ask questions and share information with the facilitator and other technicians. You can stay at one table for the entire class period, or you can spend some time at more than one roundtable.

These topics will be covered in the Business Roundtables:

- Incorporating — Lewis Spivey
- Business Practices — Vivian Brooks
- Subcontracting — Gina Carter
- Renting Pianos — Julie and Taylor Mackinnon
- Buying and Selling a Business — Anthony Pascone
- Estimating Jobs — John Foy
- Selling Humidity Control Systems — Teresa Severin
- Sales on the Side — Carl Radford
- Getting and Keeping Good Customers — Ruth Phillips
- Marketing Tips — Bob Russell

Business and computer help is waiting for you in Kansas City. All of this is available at no extra cost to technicians registered for the conference.

— Evelyn Smith, RPT
Assistant Institute Director

A Case for Customer Service

By Norman Cantrell, RPT
Economic Affairs Committee

It was a cool autumn day with just a hint of winter in the air. The phone had never been intentionally evil to me before, but today was different. You see, all I needed was a plumber to perform a simple check of the gas line in the building I had rented while renovating my shop. Because it was late summer when I moved in and over 100 degrees outside to boot, I really didn't see the need for gas for heat. So I had decided that to relieve some of the strain of moving and to spread out the expense, I would wait until later in the fall to have the gas service turned on. When I called the utility company they informed me that since the building had been without gas service for over a year an inspection of the gas lines was required before service could be hooked up. This didn't seem like an overwhelming event, but little did I know.

ECONOMIC AFFAIRS COMMITTEE

The first plumber I contacted never returned my call. He was the one suggested by my landlord. After three days and falling temperatures, I decided to find someone on my own. I selected what I thought was a reputable company from the yellow pages. I had even heard their ad on the radio. It was Thursday morning around 11:00 when I called, and I was promised they would be out that very afternoon. Eureka! I was elated. Progress was beginning, or so I thought. At 4:45 that afternoon, with no sign of the plumber, I called the company again and was told that it would be "sometime tomorrow" before they could come. I informed them that I had appointments scheduled in the morning and asked if it could be an afternoon appointment. I was told that this was no problem. At about 4:45 on a plumberless Friday afternoon I called again and was told that once again they were busy. They would attempt to get out that evening, and if not, then as soon as possible.

Sure enough, it was Saturday at 12:15 p.m. when they called to say they were on their way. At 12:40, they arrived and asked just what it was I was needing. We discussed the situation and they quoted me a price of $225. Since it had taken three days and my landlord was paying the bill I swallowed hard and said go ahead. Thirty minutes later they were done with the inspection, which consisted of capping off two gas lines, installing a gauge on the line and applying pressure. I paid the bill with a feeling of highway robbery having just been committed. Later in the afternoon, with feelings of angst, I once again called the plumbing company to inquire whether or not I was being charged weekend overtime since they came out on a Saturday or if this was their normal rate for such a service. I was told to call back on Monday when a manager, a Mr. Brinkley, would be in.

Monday morning I called for Mr. Brinkley, who was, of course, out of the office, but would return my call as soon as possible. Mid-afternoon, the return call arrived. Mr. Brinkley told me that the normal rate for such a service was in fact $175, but in certain difficult situations it was adjusted accordingly. I asked him to look into the charge and also asked why the city inspectors had not yet been out to check the line. He promised to look into the charges and informed me that since the job was performed on the weekend, it sometimes took until Tuesday for the city inspectors to get out if they had a large backlog of work. Tuesday came and went with no sign of the city inspectors.

Wednesday I once again called the now infamous plumbing company to inquire if they had, in fact, called the city to let them know an inspection was needed. They looked at their computer and informed me that according to their records the city had, in fact, been called. I then called the city to find out what the hold-up was. I had forgotten that this was Wednesday, November 11 — Veterans Day — and thus the city offices were closed. The next day of the week was, of course, Thursday, one full week since my dealings with this particular plumbing company had begun. At about 2:00 that afternoon I called the city to inquire as to why they had not been out to perform the much-needed inspection of my gas line in my now much-colder building. Much to my surprise, I was informed that there was a very good reason the city had not been out. It was quite simple: the plumbing company, which I had already paid, had not bothered to call for an inspection and purchase the necessary permit for same. My patience, which already had been worn thin, was now totally exhausted.

I picked up the phone once again and dialed the number I had by now memorized. I got right to the point and asked just why the work I had paid for was not completed by them. Amazingly enough, I was told by the person on the line that they had performed work for which they had not called in a permit. I was informed that they would have to come out again the next morning to check on the situation, sometime before noon. This was not satisfactory to me, and I informed them what time I expected them to be at my shop. Sure enough, on Friday morning they never showed up. By this time I was ready to annihilate any plumber I saw on the planet, and especially any one from this company. I drove over to the offices of the company and demanded to see a manager ASAP! The receptionist asked what it regarded. I explained the situation and she immediately called the city to schedule an inspection for that day. The manager who came to meet me was the same Mr. Brinkley with whom I had spoken on the phone before.

I explained to him how I felt lied-to — on not one, but several occasions — by just about everyone with whom I had spoken in his company. I also let him know that I felt robbed, since no one including himself could explain why I was charged $50 over the standard rate for the work which was to have been performed. He agreed with me that there was absolutely no excuse for the city not having been called when I had been told otherwise. The only consolation was an apology and a reduction in my fee by 50 percent. Needless to say I will never in my life do business with this company again.

Is the purpose of this story to let off steam and bad-mouth plumbers? Not really. There are several important issues in dealing with customers that apply to all businesses, including ours. Let's take a look and see just how we can

Continued on Next Page

Piano Technicians Insurance Program

By Jerry Kiser, CIC
Potter, Leonard & Cahan

Recently, there have been numerous inquiries about the business insurance program that is available to all members of the Piano Technicians Guild. In an attempt to explain the various options available through this program, following is a summary of the policy and application for coverage. It is a very good program, both in coverages and pricing, and it has responded well to a number of losses that have occurred. We are very fortunate that the insurance policy is underwritten by SAFECO, one of the nation's leading insurance companies. SAFECO has worked diligently to tailor its program to meet specific needs of the piano tuner/technician.

Protect Your Tools & Client's Property

Property insurance protects your investment in tools and equipment. This coverage is extended to cover your tools used in your business as well as in transit to and from job sites in vehicles operated by you.

Customers' property, which is in your care, also is covered. This is extended to cover your clients' property while in transit or at your business premises. Piano Technicians Insurance also covers your clients property while it is in the care, custody or control of one of your subcontractors.

The property coverages are broad with the primary causes of loss being fire, windstorm, explosion, vandalism and malicious mischief, burglary and theft, water damage from broken pipes and earthquake. The general exclusions are as stated in the policy, but are primarily wear and tear, latent defect, employee dishonesty, processing or any work upon property itself. The deductible for a loss under this contract is $100 per occurrence, except earthquake.

Cargo coverage is included while a tuner/technician is moving a customer's property under his/her direction and care, in a vehicle.

Get the Liability Coverage You Need

Business Liability insurance covers bodily injury and property damage liability as a result of negligence caused by a piano tuner/technician. This includes Premises and Operations, Products and Completed Operations, Owner's and Contractor's Protective, Contractual Liability, Personal Injury and Advertising Liability, and Fire Legal Liability. It is written with a "per occurrence limit" of $1,000,000 for losses with no annual aggregate, which is unique to the industry. The policy is written on a comprehensive form covering the tuner/technician for negligent acts resulting from his/her operations, with a $250 property damage deductible. The policy does not cover workmanship as that would make it a maintenance policy. However, liability covers the resulting damage that the tuner/technician may cause arising out of his/her work. Again, workmanship—the actual work being performed by the tuner/technician—is not covered and not available in the industry.

Some property damage liability examples are: a) Damage to the floor might occur as a result of moving a piano in a client's home, and b) Accidental damage to an expensive vase or painting at a customer's home.

Examples of bodily injury liability could be: a) Working on a piano and a string breaks, hitting the client in the face, or b) Customer's child drinking a cleaning solution. This is bodily injury resulting from the technician's actions. Another example of a bodily injury loss that actually occurred is c) Customer helped load piano on dolly and instrument fell over on client. Carrier paid $250,000.

"A Company You Can Depend On"

SAFECO consistently receives the highest Standard & Poor's rating (AAA Superior) for financial strength, and the highest rating (A++ Superior) awarded by A.M. Best Company, the nation's leading insurance analysts. For over 70 years, SAFECO has maintained an unsurpassed reputation for financial strength, integrity, innovative insurance products and services at a competitive price, and outstanding claim service.

Optional Coverages Available from SAFECO

Additional optional in-

A Case for Customer Service

Continued from Previous Page

improve our own customer relations.

The first requirement is to do your dead-level best to keep your appointments and promises as close to the time you have scheduled them as is humanly possible. If there is a problem, you should be calling your customer—not the other way around. While you don't need to go into every detail of why you had to be late, you should apologize for being late. This shows you value their time too. Your customer will begin a slow boil the later you run without them hearing from you. If they are calling you to ask your whereabouts you can rest assured they are no longer happy campers and may in fact already be unhappy with the service you are about to perform no matter how talented you are.

Second, if you are late with your service appointments it is best to go the second mile in the service performed and not to give your customers the feeling they are being taken advantage of simply because of your troubles. Sure, your car may have broken down on the way to their house but don't make them feel like they have to pay your towing and repair bill. Surely there is some small thing you can correct on the piano at no charge to help make up for your shortcomings.

Third, complaints need to be dealt with as thoroughly as possible and as soon as possible. If a customer is bothering to complain he is telling you about an area in your business that you are overlooking. Regardless of what business you are in, repeat customers are your best source of income. It has been said that, "You can shear a sheep many times but you can only skin it once." None of us is perfect and we can all expect to drop the ball from time to time. Just remember that trust is a unique aspect of our business and once it is lost it is next to impossible to regain.

surance coverages available from SAFECO are: a) Your owned pianos held for sale including supplies; b) On premises equipment, tools, furniture, fixtures and improvements; c) Your computer and software; Hired and Non-Owned Automobile Liability.

This is an overview of the program, which is specifically designed for the technician. This is a volunteer program, supported by the membership of the Piano Technicians Guild. I personally manage and supervise the PTG business insurance program and have been involved with it since 1986.

A member can purchase the basic program for a low premium of $250. This includes $2,000 coverage for off premise tools, $10,000 bailees customer's property, $10,000 cargo and $1,000,000 business liability. These limits easily can be increased in increments for a small additional charge. Our new partnership with SAFECO allows us to entertain larger technician operations than in the past. We are delighted how well this insurance program has responded to the needs of the members.

If you need further information, please call me to discuss your needs. The toll-free number is 1-800-548-8857.

The Piano Technicians Guild, Inc. Business Insurance Policy Description

Explanation of Property Coverage

Off Premises Tool Coverage

This coverage insures tools and equipment usual to a piano tuner/technician used off premises.

Bailee's Coverage (Property of Others)

This coverage insures against all risks of direct physical loss of or damage to customers' property, subject to the conditions of the policy issued by SAFECO Insurance Companies. *There is no flood coverage.*

Owned Pianos & Related Supplies – Including Inventory

This coverage insures against all risks of direct physical loss or damage to owned property, subject to the conditions of the policy issued by SAFECO Insurance Companies. *There is no flood coverage.*

Transportation Coverage

Shipments:

This coverage applies to property sent by common carrier, mail or UPS by means other than you.

Permanent On-Premises Equipment, Tools, Furniture, Tenant Improvements

This coverage insures on site personal property other than inventory at your premises, i.e., equipment, tools, furniture, shelving and improvements you have made to a landlord's building. Tools that go off site are insured under *off premises* tool coverage.

This coverage insures against all risks of direct physical loss of or damage to the property covered subject to the conditions of the policy issued by SAFECO Insurance Companies. *There is no flood coverage.*

Computer Hardware

This coverage applies to computers you use in your business. Includes $5,000 for software and $5,000 for extra expense. *There is no flood coverage.*

Bodily Injury & Property Damage Liability to Others

The company agrees to pay those sums that the insured becomes legally obligated to pay as damages because of "Bodily Injury" and "Property Damage" to which this insurance applies. The company will have the right and duty to defend any "suit" seeking those damges due to the insured's negligence.

This insurance applies to "Bodily Injury" and "Property Damage" only which encompasses liability to others for accidental "Bodily Injury" or "Property Damage" that results from either a condition on the insured's premises or in the insured's operations in progress whether on or away from the insured's premises. Also covered is the potential liability for "Bodily Injury" or "Property Damage" that arises out of the insured's completed work. *This policy does not cover workmanship and damage to the customer goods.*

Hired Auto & Liability

This insurance provides coverage and applies to *"bodily injury"* or *"property damage"* arising out of the maintenance or use of a "hired auto" by you or your employees in the course of your business.

Non-Owned Auto Liability

This insurance provides coverage and applies to *"bodily injury"* or *"property damage"* arising out of the use of any "non-owned auto" in your business by any person other than you.

This is a brief generalization of the insurance coverage. The actual coverage is governed by actual policy provisions. The specific terms governing the coverages are set forth in the contract and are the basis upon which claims are paid.

To Apply for Coverage: Contact me at the number below to request an application:

POTTER, LENOARD / OLYMPIC INSURANCE, P.O. Box 82840, Kenmore, WA 98028, (425)486-4334, Fax: (425)486-4681

CALENDAR of EVENTS

July 21-25, 1999
PTG ANNUAL CONVENTION & INSTITUTE
Hyatt Regency Hotel, Kansas City, MO 64111
Contact: The Home Office (816) 753-7747
3930 Washington, Kansas City, MO 64111

October 1-3, 1999
OHIO STATE / CENTRAL EAST REGIONAL
Grave Piano & Organ, Columbus, OH
Contact: Kim Fippin, (614)890-2197
275 Foxtrail Pl, Westerville, OH 43081

October 8-10, 1999
TEXAS STATE ASSOCIATION
Waco Convention Center, Waco, TX
Contact: James Geiger (254)867-9589
3924 Kendall Lane, Waco, TX 76705

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 in 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.

Piano Technicians Guild Foundation Update

Remembering Stephen F. Jellen

It is the fortunate and rare technician who has serviced one of the 50 or so pianos that bear the name Stephen F. Jellen. Much more common are the technicians who knew Mr. Jellen, partook of his knowledge and delighted in his friendship.

Stephen F. Jellen of Stafford Springs, CT is best known, perhaps as a master craftsman, a piano builder and rebuilder, and a consultant for the Pratt-Read Company.

His lifetime of achievement and his contributions to the advancement of piano technology led the Piano Technicians Guild Foundation to name its library and historic preservation fund in his honor. This publication provides an important opportunity to remind some members of Steve Jellen's legacy and introduce other, more recent members, to it.

Born in 1917, Mr. Jellen worked briefly in a New England mill, served as a medic in World War II and returned home to work as an apprentice in a piano shop in Massachusetts. He then opened his own shop in Stafford Springs where he built pianos, rebuilt pianos and continuously honed his exacting craft.

In spite of only a grammar school diploma, Mr. Jellen had an insatiable thirst for knowledge. He invested $7000 in the construction of his first piano, which he sold for $1500. He proceeded to build nearly 50 more pianos.

Mr. Jellen's extraordinary talent received national and international recognition through the Guild, which honored him with both the Hall of Fame and a Golden Hammer. He gave generously of his time as a sought-after teacher of piano technology. The *Wall Street Journal* and the *Hartford Courant*, among other major media, profiled his life and work.

Stephen F. Jellen died on August 21, 1977. Wendell Eaton, PTG Past President, remembered him as "a craftsman, a friend, a humorist, a searcher, a dreamer! Perhaps one of the finest craftsmen in the world, but most important, a fine human being!"

Steve Jellen devoted his life to the pursuit of excellence in piano technology. The Piano Technicians Guild Foundation honors him in perpetuity through the naming of the Stephen F. Jellen Memorial Library and the Stephen F. Jellen Fund for Historic Preservation.

You, too, may help preserve the legacy of Stephen F. Jellen and so many other fine technicians by contributing to the Piano Technicians Guild Foundation. ■

"The Piano Technicians Guild Foundation would like to thank everyone who contributed to the Foundation's success. The Patron level is a single contribution of $100 or more. The Contributor level is $50 or more and the Supporter level is $35 or more. Special recognition will be given to corporations and individuals that exceed these three contributor levels." ■

Welcoming You to Your Museum

The Piano Technicians Guild Foundation Board looks forward to welcoming you to Kansas City in July. The Foundation Museum and Stephen F. Jellen Library will be open Thursday, July 15, and Friday, July 16, for tours. Shuttle busses will be provided.

The Foundation Museum and Library serve as repositories for the tools and other artifacts of the piano technology craft. The history of the Piano Technicians Guild and the organizations that preceeded it are also on display. The Stephen F. Jellen Library houses the books that comprised the personal collection of William Braid White.

The Piano Technicians Guild Foundation helps build a brighter future by preserving and displaying the treasures of the past. We hope that you will join us in viewing the rich heritage we all share as piano technicians. ■

Planned Giving —Leaving a Legacy

A planned gift is a form of givning for those who would like to make a significant contribution to ensure the future of the Foundation. It is also a way for the Foundation to gather assets that will provide income from investment earnings to support operations and current and future programs.

The most common form of planned giving is the bequest in a will that sets aside a specific amount of money or percentage of the reminder of the estate to be distributed to the Foundation. This part of the estate will not be subejct to federal estates taxes. Naming the Foundation as the beneficiary of your PTG life insurance policy is one important form of planned giving.

Some other forms of planned gifts include the charitable reminder trust, charitable lead trust, charitable gift annuity.

We encourage each member of the Piano Techniicans Guild to consider how your planned gift might help perpetuate the work of the Piano Technicians Guild Foundation.

The Foundation does not provide any legal or tax advice. Individuals intersted in making a planned gift should consult their attorney or tax advisor. ■

Jane Karwoski Reports

Jane Karwoski, winner of the PTG Foundation's MTNA scholarship award, reported to the organization on her use of the $1,000 scholarship and the publicity that she generated for herself and the organization.

The PTGF grant financed Ms. Karwoski's study of Edwin Gordon's "Music Learning Theory," the basis of the "Jump Right In" instrumental method. Chris Azarra's improvisation workshop and Bruce Dalby's improvisation class at the University of New Mexico were part of her study plan. She also took a two-week course taught by Wendy Valerio and Gordon at the University of South Carolina.

All three experiences – plus a library of "Music Learning Theory" texts – are helping her teach piano students to speak the language of music, not just read or recite it.

Ms. Karwoski also included private piano study to prepare her for the performance exam for national certification in piano. (Her NCTM is in music history.)

"My own playing was not a priority before; that has changed – after all, my patron is expecting it of me!," Ms. Karwoski says. She now practices two hours a day. ■

PTG Home Office Tour

Since Kansas City is the site of our Home Office, you will able to arrange a tour of the building, which was purchased in 1992. The Piano Technicians Guild Foundation has organized a display there of historical materials including William Braid White's book collection, a Golden Hammer display and the bicentennial Piano replica constructed by the Connecticut Chapter in 1976. Sign up for these tours on Thursday and Saturday, at the PTG Registration desk, where our Home Office staff will be available to answer questions and help make your convention pleasant. The tours will take place on Thursday, July 22 and Saturday, July 24 from 9 a.m - 2 p.m. ■

Passages ...

Elwyn Lamb
July 22, 1907-February 1999

Elwyn Lamb or "Lamby" as everybody called him, a founding member of PTG and before that of ASPT, was a long-time friend of ours together with his late wife Norma. As a matter of fact he and I were pupils at the same time of the late Willard Davis at what is now Los Angeles Trade Technical College.

Lamby was a strong supporter of PTG, never missed a local, state or national meeting as long as his health allowed him to do that. He was successful in his work and liked to show a book of signed photographs of all the many famous people he used to serve.

Some years back we met on a concert cruise from L.A. to Vallarta without knowing in advance that we would meet there. He was engaged by a well-known cellist and I had to take care of a Steinway concert grand. Well, there were two pianos on board and thus it did not come to any friction.

Because of failing health, he spent that last few years in a convalescent home but I understand even then he complained when the piano was out of tune!

We will miss a wonderful person and PTG will miss a strong supporter.

—Fred Odenheimer

In Memory *Harland Burgess*
Brandon, FL

New Members— Join In March

REGION 1

191 Philadelphia, PA

Kurt E. Weissman
403 Reading Avenue
Barrington, NJ 08007

REGION 2

201 Washington, DC

Jeffrey A. Butler
15385 Poplar Lane
Lexington Park, MD 20653

212 Baltimore, MD

Sean C. Burget
13000 Old Frederick Road
Sykesville, MD 21784

231 Richmond, VA

Justin B. Lineberry
1236 Keswick Lane
Richmond, VA 23225

331 South Florida

Vincent J. Hunte
P.O. Box N 9610
Nassau Bahamas

Todd H. Stephens
759 NW 98th Way
Plantation, FL 33324

James O. West
5431 NW 15 Street, #4
Margate, FL 33063

REGION 4

537 Madison, WI

Doreen E. Hugener
923 Gladstone Way
Lake Mills, WI 53551

Adam R. Michelman
5002 Sheboygan Ave., #348
Madison, WI 53705

REGION 5

801 Denver, CO

Joseph D. Woods
14929 Harrison Street
Brighton, CO 80601

REGION 6

901 Los Angeles, CA

Donald M. Goodman
7111 Hatillo Avenue
Winnetka, CA 91306

926 Orange County, CA

Rochelle J. Schoppert
116 Las Flores
Aliso Viejo, CA 92656

REGION 7

012 Vancouver Island, BC

Peter Fuhrman
RR #1, C-14 Munsonville
Powell River, BC V8A 4Z2
Canada

841 Salt Lake City, UT

Jeremy G. Stevens
464 W. Creekside Lane
Kaysville, UT 84037

846 Utah Valley

Thomas G. Merrill
378 Ridgeway Drive
Grand Junction, CO 81503

996 Alaska

Dan S. Mcelrath
12924 Ridgeview Drive
Anchorage, AK 99516

New RPTs

REGION 4

600 Waukegan, IL

James L. Thompson
223 S. Main Street
Mt. Prospect, IL 60056

REGION 5

581Minn-Kota, ND

Kristina Anderson
207 E. 42nd Street
Hibbing, MN 55746

REGION 6

941 San Francisco, CA

Paul S. Larudee
405 Vista Heights Road
Richmond, CA 94805

REGION 7

12 Vancouver Island, BC

Myles Mcmillan
5767 East Sooke Road
Sooke, Bc V0S 1N0
Canada

Kansas City Offers a Full Plate

I am a life-long resident of Kansas City, MO and hope you'll feel very welcome here during your convention in July! We are a city of much diversity, and your convention will be held in a central part of the city, with quick access to many attractions.

Your hotel is located between the downtown and Plaza districts of the city. The downtown area is primarily a business area and the Plaza is an upscale shopping district which is located around 47th and Main. For shopping, the Town Pavilion (1111 Main) is located downtown and contains a variety of shops and several fast food outlets. Your hotel is in the Crown Center complex at 2450 Grand (1 block east of Main) which includes upscale department and specialty stores; restaurants, sandwich shops, a live professional theater (The American Heartland Theatre), and a movie theater. The headquarters of the Hallmark Corporation also is located in this complex and includes a visitors' center which details the history and development of Hallmark Cards; and Kaleidoscope, an interactive art exhibit for children ages 5-12. Two outlet malls are located in the outer reaches of the city. The Great Mall of the Great Plains (151st at Interstate I-35 in Olathe, KS) and the Lawrence River Front Plaza Factory Outlet Mall (6th & New Hampshire in Lawrence, KS) are both popular destinations.

Our location in the Midwest has made us a central location for the processing and distribution of livestock and we are well-known for our tasty steaks and barbecue. Popular restaurants for barbecue are: Gates Barbecue (Linwood & Main); Masterpiece Barbecue (on the Plaza, 4747 Wyandotte); and Arthur Bryant's Barbecue (1727 Brooklyn). For steaks: The Hereford House (a few blocks from your hotel, 20th & Main); The Golden Ox (1600 Genessee); and Ruth's Chris Steakhouse (on the Plaza, 700 W. 47th). Other popular restaurants include: Club 427 (427 Main); The Cheesecake Factory (4701 Wyandotte); JJ's (910 W. 48th); and Winstead's (great hamburgers! 101 Brush Creek — near the Plaza). Many restaurants which feature various types of ethnic cuisine also are available; along with the usual variety of fast food places.

Tourist attractions include: Worlds of Fun Amusement Park and Oceans of Fun Water Park (I-435, exit 54); the Toy and Miniature Museum (5235 Oak); the Kansas City Zoo (in Swope Park), which includes an IMAX theater with a 6-1/2 story movie screen; the Harry S Truman Museum (24 Hwy & Delaware in Independence, MO.); the Negro Baseball League Museum and Kansas City Jazz Museum, (1601 E. 18th St.); the Kansas City Royals Baseball Team (Kauffman Stadium); and the New Theatre Restaurant, a dinner theater (9229 Foster, Overland Park, Kansas). For those who are willing to "take a chance," there are several riverboat casinos located along the banks of the Missouri River. Fine Arts attractions include: the Nelson-Atkins Museum of Art; the Kemper Museum of Contemporary Art and Design (4420 Warwick); the Lyric Opera Company (1029 Central); the Kansas City Symphony; the Coterie Children's Theatre (2450 Grand); the Missouri Repertory Theater (4949 Cherry St— east of the Plaza); and Starlight Amphitheatre (Swope Park).

I hope your enjoy your stay in Kansas City and have the opportunity to enjoy the great variety of entertainment, historical and fine arts attractions which are available.

— Vicki Hedger, Grandview, MO ✔

Auxiliary exchange

Dedicated To Auxiliary News and Interests

On To Kansas City

Dear Members:

You may remember that I am also a national officer of my international music fraternity, Sigma Alpha Iota. Our Vice President, Diane Hennessy, is also a member. The group has a member exchange on the Internet and that is where I met the author of the above article.

Phyllis Tremper
PTGA President

Vicki has kindly offered to write about Kansas City and what you can do and look for before or after the convention. The Thursday tour will take us to the Truman Library and we will have a Mystery Play during lunch after which we will travel by bus to the Plaza for shopping and sight seeing. You can take a boat ride there and then catch a trolley back to the Hyatt whenever you wish.

So, choose some of the other features she mentions to do on your own. Saturday morning we will be going to Hallmark. Those of you with cars may want to catch those outlet malls on the edge of the city. Be sure your car is full when you go.

Watch the bulletin board by the registration desk to talk to each other. I have planned no classes for Saturday, so fill your day with KC fun things to do.

— Phyllis Tremper
PTGA President ✔

In Memory ...

I am sorry to announce the death of our member, Dorothy Silva, wife of Mike Silva, RPT, on Sunday, January 31, 1999. If you desire, you may make a donation in her memory to the Auxiliary Piano Scholarship Fund.

— Phyllis Tremper, PTGA President

PTG Auxiliary Executive Board

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HEX SHANK ADAPTER—Adapt your power screwdriver to fit any combination tool you like. Save time and effort. See review on page 14 in the Oct. '98 Journal. Cost: $14.50 including shipping. Ken Amend, RPT, 3352 Holiday Dr. S., Salem, OR. 97302; 1-800-489-8920; kamend@open.org

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See our ad on page 3.

VIDEOS

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WANTED: Used Accu-Tuner, please call Nina Butler at 800-566-3472.

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

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.

WANTED early square pianos -pre 1870- any make, or condition-especially original condition. Michael W. Hart, Box 268, Corbin, KY 40702. 606-528-8760.

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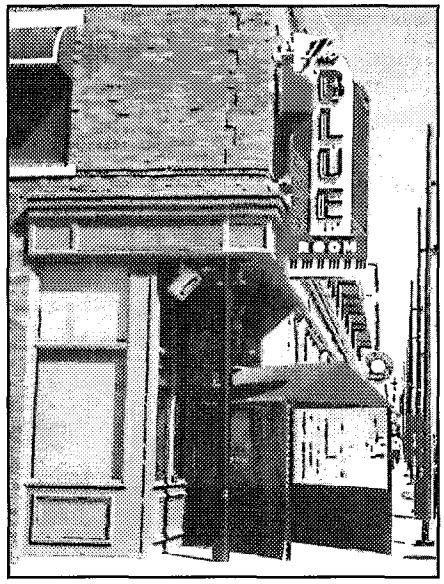
DISPLAY AD INDEX



The Blue Room, evocative of one of the famous original 18th & Vine jazz clubs, is both a nightclub and a part of the Kansas City Jazz Museum.

The legends of Kansas City Jazz continue to play here. You can, too! The Blue Room contains artfully displayed Kansas City jazz artifacts with a seletion of jazz classics on the video jukebox and Kansas City musicians on stage four nights a week.

Kansas City. It's a great town with a rich history, a giant in the development of jazz, and an outstanding city to host the 42nd Annual Piano Technicians Guild Convention and Technical Institute, July 21-25. Make plans now to attend!

For more information surf the WWW to www.ptg.org/1999/conv/

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TECH GAZETTE
YAMAHA
May 1999

"String Voicing"...a New Concept?

An area of piano service sometimes referred to as "string voicing" deals with establishing a clear/clean definition of the "speaking" segment of the wire and correct phase in the vibrating pattern of the string. In order to achieve maximum sustain, volume, and clarity of tone, there must be a well-defined termination point for the speaking segment of the note being played. These points lie between the bridge and the agraffe, capo, or V-bar.

Two points to consider when preparing to voice: Is the string straight and making good contact against the bridge, bridge pin, and agraffe or capo bar? Is the string seated? *(This is string termination)*

Does the hammer strike all strings of the unison at precisely the same instant? *(This is phasing)*

Procedure

I use the procedure taught by Yamaha in the Little Red Schoolhouse program.

1. Make sure the hammers are traveled and angled properly, and the action is in good regulation and repair.

2. Seat or terminate the strings:

a) The piano should be "at pitch".

b) Using a 1/8" to 3/16" wide piece of brass stock, very lightly tap down all of the strings onto the bridges. Tap at an angle in the direction of the bridge pins.

c) Lightly tap or push down the strings that cross over the rear duplex area.

d) With a string hook, gently lift the strings up and in the direction of the agraffes.

e) Using a wide piece of brass stock with a small string groove filed into the tip, gently massage the strings in the capo areas. Place the tool on the speaking side underneath the capo bar and gently pull toward you.

f) Now using the same piece of brass stock, gently massage the strings down that cross over the front duplex areas.

g) Raise pitch and tune the piano.

3. Fit Hammers to Strings

Position each hammer so that it touches its unison. Pluck each string of that unison to see if the hammer mutes all of the strings. If not, proceed as follows:

In grand pianos – raise the string(s) that are muted by slightly lifting the muted string(s) upward and toward the agraffe.

In vertical pianos – tap the muted strings down, thus moving them slightly toward the plate. It doesn't take much to make a change, so be gentle.

Recheck. In order to achieve good hammer fit, it is sometimes necessary to raise or lower strings and refine hammer filing and hammer angle.

Retune the piano. You should notice the musical change. A foundation has been laid for stability of tone. The "voice" of the piano will ring clearer and the tuning stability will be improved. The tone will sound warmer, but focused, as the dynamic range is expanded.

By following this basic step-by-step process called "string voicing", it is possible to achieve a substantial improvement in the musical capability of the piano... one string at time.

— *Craig Febrenbacher*

Craig Febrenbacher is originally from Robinson, IL (home of the Heath Toffee Bar) and now resides in Effingham with his wife Debbie, a 2nd grade school teacher. He has been a Yamaha consultant for two years and a Little Red Schoolhouse graduate. The aspect of the business he enjoys most is solving and resolving problems...the detective work! His favorite expression of "I see" indicates his knack for getting to the bottom of the problem at hand. His specialties include action regulation, piano prep and Disklavier service.

Craig recounts his first experience tuning a Yamaha piano in 1978: "Actually it was my CP-70 Electric Grand. The first REAL Yamaha piano was a Dark Oak Console belonging to Carla and Robert Birkofer of Robinson, IL. What a thrill it was to tune. Everything 'worked' and I could actually hear what was happening as I tuned. I mean the tone was clear and well defined and the tuning pins moved with a controlled predictability, which is what a beginning tuner needs. Man, it was great!"

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