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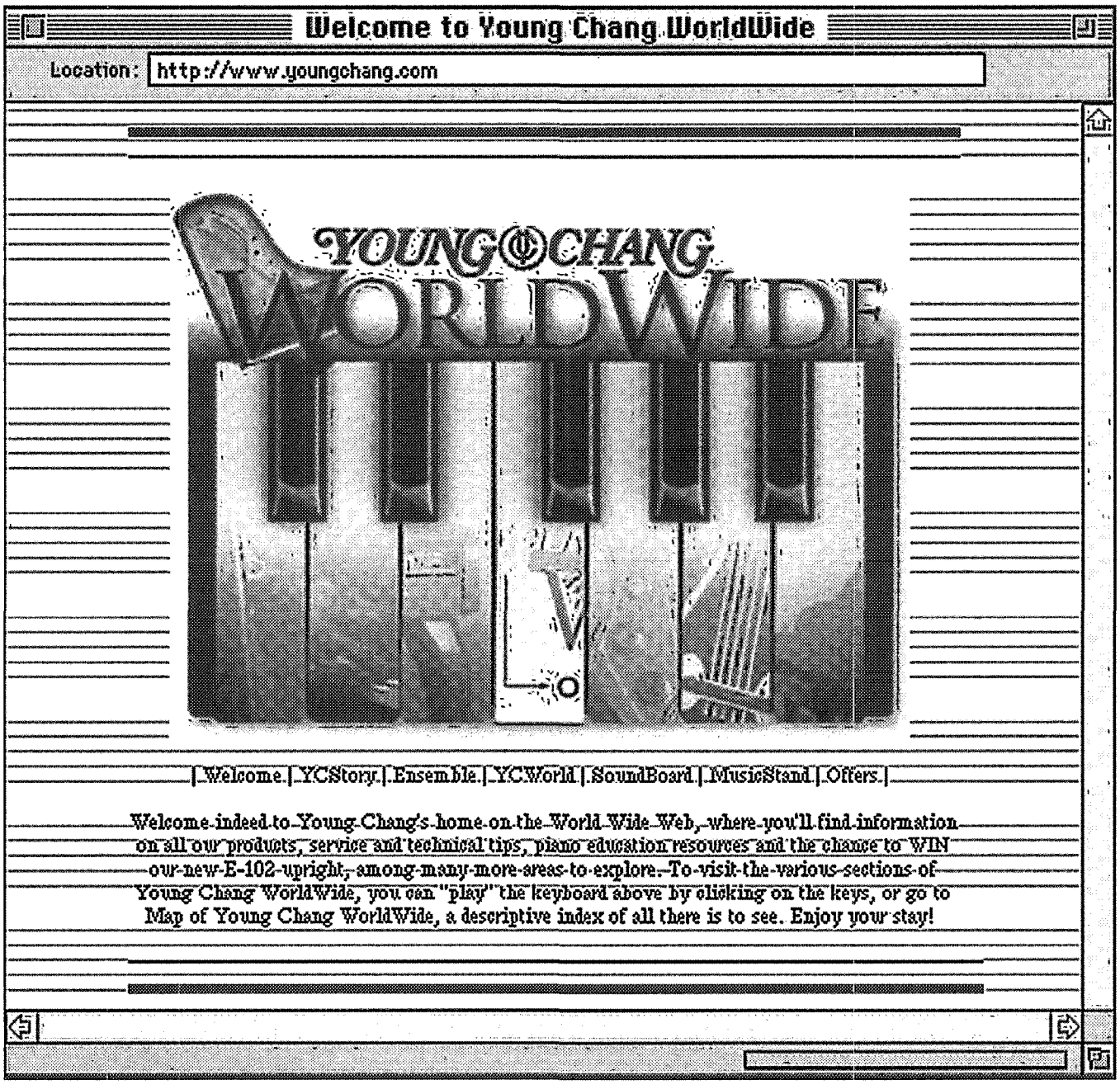

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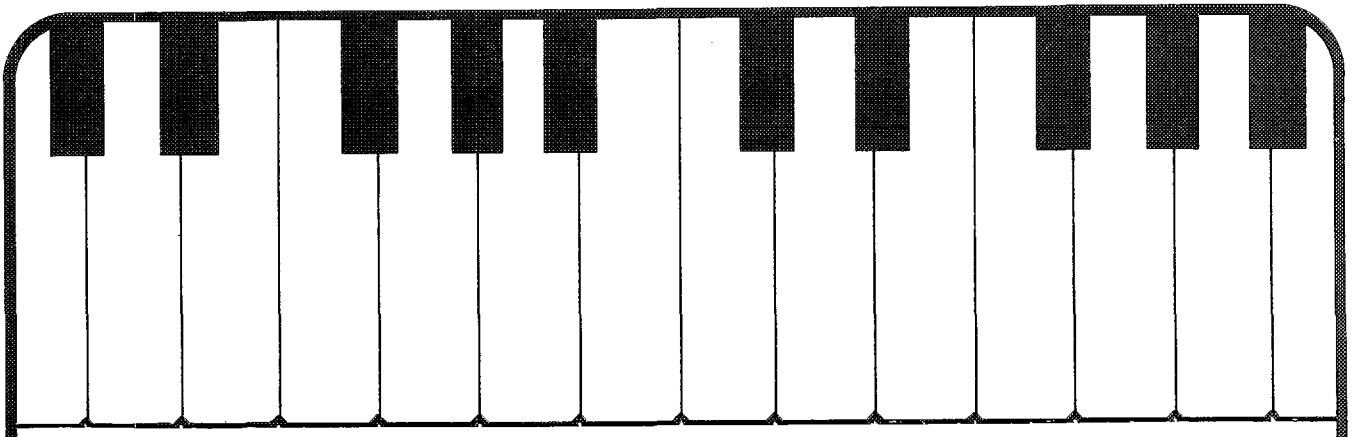

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PIANO TECHNICIANS
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Editorial Perspective

What is Good Tone?

Steve Brady, RPT
***Journal* Editor**

Several articles in this issue deal with piano hammers and the concept of tone regulation or voicing. Underlying the notion that we can alter the tone quality of a piano is the assumption that we can somehow identify or distinguish "good tone" from "bad tone" in piano sound. That we all have subjective reactions to piano tone is evident; when we try to describe ideal tone in objective terms, however, the issue often becomes murky.

Our individual conceptions of piano tone must spring from our individual experiences with pianos. If I grew up playing an old piano with a sweet, mellow tone, while you grew up listening to Barry Manilow records, we'll likely have different ideas about what constitutes good tone. If my piano is always out of tune and yours is tuned every other month, I may think that your piano lacks that certain luster, that "warble of nightingales."

To make matters worse, our vocabularies about tone seem to differ as well. A "warm" tone to one person means a tone with plenty of fundamental and a smooth, round, deep quality; to someone else, it means a sound with lots of fire and brilliance, rich in upper partials — the complete opposite, in fact, of the first person's definition. The lack of uniform nomenclature which seems to plague our profession in general shows up in spades when we talk about tone.

In describing the ideal hammer, one technician will say that it needs to be hard inside, getting gradually softer towards the top. Another voicer will say that good piano tone results from a hard, smooth surface stretched over a soft core. They can't both be right — or can they? Perhaps they're talking about different aspects of the same hammer.

The process of becoming an expert tone regulator requires first and foremost that the technician strive to transcend personal prejudice about tone quality. Don't worry, that prejudice will always be there, lurking in the background, and will always color your work; this isn't a bad thing — we can call it style. But the first step in learning to voice must be the acquisition of some knowledge about what others consider to be good tone.

I recommend listening carefully to piano recordings — lots of them. Try to find a variety of recordings in a variety of musical styles: baroque, classical, romantic, jazz and pop. Compare the sounds of the different pianos. Is the same sound that works for jazz successful for romantic music? Compare recordings of the same repertoire by different artists. Do you like one piano sound better than the other? Why? Can you hear problems like duplex "sizzle" or the twang we associate with a hammer not mated to the strings? How much of the piano's sound can you attribute to the acoustics of the hall, how much to microphone placement, and how much to "studio magic?"

Since these questions are difficult to sort out, it's important to attend live performances as well. If you attend enough concerts at the same hall, you'll find that where you sit in the hall has a huge effect on the sound you hear. You'll notice that the piano's sound will vary with its placement at different spots on the stage. Most of all, if you have the opportunity to hear different pianists play the same piano during the same concert, you'll have the impression that you're hearing completely different pianos. If you've prepared pianos for concerts, you may have noticed that the piano sounds different when you're on the stage — at the keyboard — than when you hear it out in the hall.

Tone regulating is a complex art. We can't hope to become good at it if we don't take the time and effort to study the nuances of tone. After listening enough, you may find that you can distinguish — by sound alone — a Steinway from a Bosendorfer, a Baldwin from a Bechstein, a Yamaha from a

Kawai. You'll then be in a position to know what it is about the sound of Rubenstein's piano (in the fabled Max Wilcox recordings) that really appeals to you, or what qualities of Ivan Moravec's instrument made it ideal for recording the Chopin "Nocturnes." You will have entered a world as arcane and private as the world you slip into when you tune, but it's a different planet altogether. This is the world where good voicing begins.

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PIANO TECHNICIANS **Journal**

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Image

PTG President
Leon Speir, RPT

The American Heritage Dictionary defines ***image*** as; *"The opinion or concept of something that is held by the public,"* or *"The character that is projected to the public, as by a person or institution, especially as interpreted by the mass media."* It also defines image as *"A mental picture of something not real or present."* ***Image,*** how important is it?

How does a nonmember view PTG? Do they view PTG as a political machine constantly wrangling over petty political issues and personalities, or do they view PTG as a professional organization trying to meet the needs of all the members? How do other stakeholders such as music teachers, dealers and manufacturers view PTG? Are we viewed as a team player to promote music and the use of the piano, or are we viewed as a top-heavy organization whose goals are internal instead of external?

Do we have control over our ***image***? Certainly we do if we recognize the powerful role we play in our daily interaction with the piano playing public. PTG is known by the image we project. To effectively build a market base for piano technicians, our ***image*** must be a positive one.

In the environmental analysis that is contained on pages 11-16 of the Vision 2001 document, several organizational **strengths** of PTG are recognized. Some of the strengths that are identified are: members willing to share knowledge, an intelligent and talented membership, an involved membership, publications and educational tools (i.e., the *Journal,* brochures, books, technical bulletins, study guides, etc.), financial stability, ownership of our own Home Office building, and a well-organized Home Office staff.

Several weaknesses were also identified. Included among those are: communications breakdowns, lack of trust, the political structure at the Council level, and little or no interest by nonmembers in joining PTG. In addition, Vision 2001 identifies the lack of support from educational institutions as a threat as PTG moves toward fulfilling its mission.

PTG's ***image*** is a by-product of who we are and how we project who we are to society. It is the environmental analysis that gives us a perspective on who we are and what changes may be needed. If we do nothing to cultivate our ***image,*** then the last definition of ***image*** is what we risk, *"A mental picture of something not real or present."* It is our responsibility both individually and collectively to project to society who we are. Thus we cultivate our ***image.***

Del Fandrich

More on Tuned Duplex Scales

In response to Dan Franklin's letter in the February issue (Page 8), I expected my views on duplex string scaling to be somewhat controversial. To question — indeed, challenge — any fundamental design principle of the piano that has been acclaimed as gospel for over a hundred years is not something that is going to be accepted easily.

First, the physicist Hermann L. F. Helmholtz had good reason to praise the Steinway piano of his day. It was indeed a dramatic improvement over any instrument that had come before. Theodore Steinway alone was granted 45 patents from 1868 to 1885. Even allowing that some of these were design patents it was still a tremendous record — one that I think remains unchallenged as of today. Of course the resulting instruments were found to be superior! Tuned duplex stringing scales, though, were only a very small part of the developments made during those years.

Please indulge me if I go back again to another example from the auto industry: when hydraulic drum brakes were introduced to the automobile they also were heralded to be a major leap forward in auto performance. The car I drive today doesn't use them, however; it uses four-wheel disc brakes instead. What was once considered to be a major advance in automobile design is now being abandoned. Why? Because the new system works better, that's why. This brings no discredit on those who developed drum brakes. It's just that in the decades since they were invented auto engineers have learned how to do the job a better way. So it should be — must be, if the industry and the instrument are to survive — with the piano. May I remind the reader that even Theodore Steinway had problems getting his new ideas accepted by some of his own factory people — they considered the instrument to be already perfect.

To some degree, the overwhelming success of those instruments has been a millstone around the necks of both the Steinway company and the industry in general ever since. They were so successful musically and commercially that other companies were forced to emulate them or gradually fade into oblivion. In many ways these instruments marked the end of truly innovative piano design and development. Competitors were afraid to challenge the Steinway powerhouse of engineering, manufacturing, and marketing. And not just competitors; there were those within the company who by the early 1900s not only believed that the instruments they were building were perfect, they were publicly declaring them to be so. This belief was held by the company's leadership at least well into the 1970s.

It seems that no company searching for mass sales today really dares to challenge the revered traditions of yesterday regardless of the performance gains to be had by throwing some of them out. No, I'm not suggesting that we should throw all of them out! But isn't it time to retire at least a few? With honors, to be sure, but get them retired all the same. Nor do I think we should try to re-invent, or redefine, the instrument. It should remain the pianoforte. Surely, though, it has not reached the peak of its performance potential yet.

It is true that some aspects of the piano have continued to evolve over the years. But, with the exception of some manufacturing innovations introduced by Baldwin with the SF*f*10 and SD*f*10 during the 1970s — the vertical hitch pin in particular, though developed to facilitate production, actually provided a genuine improvement in performance — there really hasn't been much revolutionary thought in the piano industry of late. And while pianos like the Fazioli certainly have some innovative features — the most notable perhaps being the extreme care with which they are crafted — one can hardly call them "revolutionary" designs. Mr. Fazioli certainly doesn't claim that they are. Nor are the recent offerings from Weber, Yamaha and Bosendorfer.

Yes, Dan is correct; the presence of a tuned duplex string segment does indeed influence the quality of a piano's tone. But not in a positive way, I'm afraid. Let me repeat the results of my study and experimental work. It is my opinion that the use of tuned duplex stringing designs, particularly the front duplex between the Capo d' Astro V-bar and the counter-bearing bar (tuned back segments are a bit less problematic) results in:

- an overall loss of energy and, hence, an overall loss of acoustic power
- an accompanying overall loss of sustain
- unless the sections are precisely and exactly tuned — a condition that is impossible to achieve in production — problems with falsely beating aliquot string
- unless perfectly designed and machined, the introduction of a variety of undesirable string noises.

The impedance ratio — and the characteristics of that impedance, whether elastic, massive or frictional — between the vibrating strings and the attached soundboard system will determine the rate of energy transfer from the string to the soundboard. A similar relationship does not exist between the speaking length of the string and the tuned duplex segment of the string. The energy going into the soundboard is converted into sound energy. The energy going into the tuned duplex string segment is, for the most part, lost. And in the meantime it has managed to give the speaking segment a less than solid termination.

I have worked extensively with both systems both as a rebuilder and as a designer. For me, at least, the results have spoken for themselves: Tuned duplex stringing systems can be made to perform reasonably well if everything works perfectly. But better sound quality — regardless of how it is measured or defined — can be obtained by eliminating them and improving the soundboard and rib designs in those areas. Others are free to do their own experimenting and form their own conclusions, of course. Fortunately, there is no law stating that the development of the piano has to follow only one path! Let progress happen, no matter what path it may take.

Before leaving this subject, I suppose I should try to describe what I am trying to achieve in terms of tone quality, particularly in the upper tenor and treble sections. It's a bit hard to do with words, but here goes. I want a sound that is clear and free from such abnormalities as so-called "false" strings, free from the extraneous beating of mistuned duplex strings and free from all of the miscellaneous string

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The 2nd GPA
Dublin International
Piano Competition
Dublin, Ireland
All Six Prize Winners selected Kawai.

The 42nd ARD International
Music Competition
Munich, Germany
First Prize Winner selected Kawai.

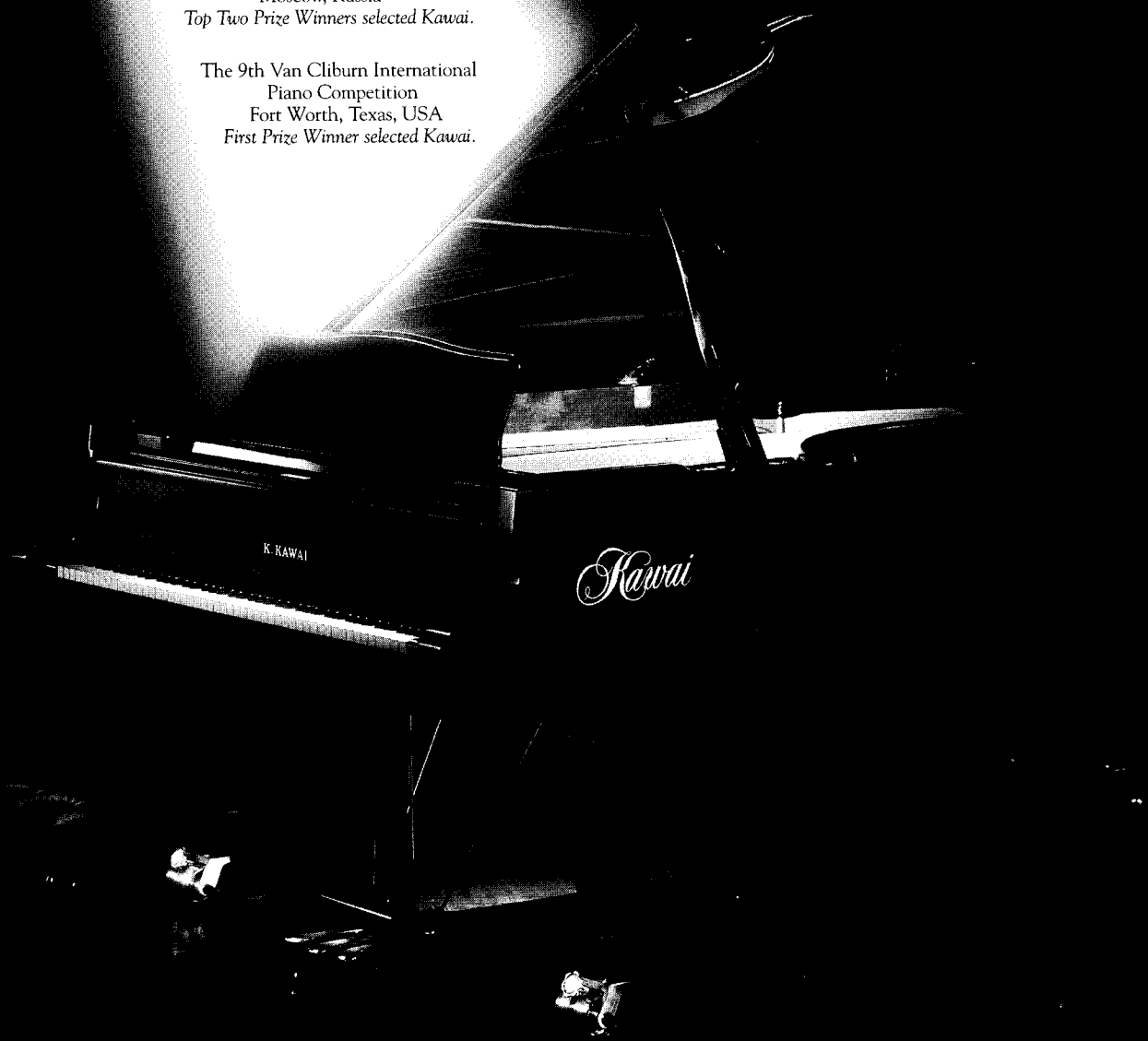
The 45th Ferruccio Busoni
International Piano Competition
Bolzano, Italy
First Prize Winner selected Kawai.

The 11th Santander
International Piano Competition
Santander, Spain
First Prize Winner selected Kawai.

The 2nd Hamamatsu
International Piano Competition
Hamamatsu, Japan
First Prize Winner selected Kawai.

The 10th International
Tchaikovsky Competition
Moscow, Russia
Top Two Prize Winners selected Kawai.

The 9th Van Cliburn International
Piano Competition
Fort Worth, Texas, USA
First Prize Winner selected Kawai.



It's becoming a familiar refrain.

Continued from Page 8

noises and buzzes that are a normal part of the tuned duplex string design. I want a sound that is powerful relative to the bass and tenor sections of the piano — that is, the power should not drop off appreciably. There should be no "killer octave" in the first treble section. I want a sound that has a relatively linear sustain envelope. In other words, I don't want a sharp percussive attack followed by a rapid decay of sound energy. I want a sound that has good long term sustain. (This can be a problem at times. I often wish some of the pianos I'm working on had more than the common 67 to 68 dampers — 72 are often needed. This is easily designed into a new piano, but for a variety of reasons, impractical to get in an older instrument we are redesigning along with its remanufacture.) I want a sound that is bright and powerful when the piano is played hard yet is soft and whispery when the piano is played softly. By this I mean that it should have a good dynamic range, not one that is just loud and less loud. And I want all of this with hammers that are soft — very soft. And I don't want to have to file them to pointy nubs and pour on a half-gallon of lacquer or melted keytops or anything else to get it.

— Del Fandrich, RPT

Questioning Tuned Duplex Scales

I have been reading the *Journal* with heightened interest since the May 1995 issue, in which appeared Dan Franklin's "Tuner's 10-Year Tonal Treasure Hunt" article. Subsequent issues containing Mr. Franklin's second article and the resulting letters from readers regarding his commendable research and audio testing have run the gamut from informative to entertaining. My own opinion on his research and theory is irrelevant, yet, I would like to make a few comments.

The notion that Steinway foremen and/or scale designers dictated the "correct" placement of rear duplex aliquot bars to the stringers on the factory floor to achieve the execution of the patent is questionable at best. If such a policy ever existed, it's long since gone. Evidence Mr. Sal Verdolino's letter in the October issue.

Granted, the desired tuning of each of these duplex saddles is a matter of simple mathematics — that is assuming they are individually adjustable (Mason & Hamlin style, for example), there exists sufficient distance between the rear row of bridge pins and the hitch pins, there's enough plate surface area to accommodate the correct location, and other factors. However, the real world rears its ugly head with the existence of dissimilar tensions between the speaking length and the rear duplex length (John Hartman, August issue), inconsistent notching and pinning of the rear row of bridge pins, differences in string angles from bridge pins to duplex saddles (are we, as technicians, going to tune these sections differently in the winter than we would in July?), etc. Add to this the fact that Steinway aliquots are not individually adjustable for each unison and the practical world starts to distance itself dramatically from the hallowed halls of the R&D department, today's or yesteryear's. Furthermore, which consonant interval do you prefer? — there are several.

The only method I know of to tune these segments is to slide the duplex pieces around after the piano is strung and tuned to pitch so that adjustments may be evaluated immediately. To do so is to cause some scarring of the finish on the plate. I've been unstringing Steinway grand pianos manufactured from as far back as 1873 for 16 years and have yet to find any evidence of "tuning" in the plate finish.

To further question practical rear duplex tuning, the numerous Steinway grand piano models made for the last 100 plus years have utilized cast aliquot bars bearing several scale applications on their undersides. How can the "correct" tuning in the high treble, for instance, be achieved for both an S and an L with the same bar while the pianos possess different speaking lengths?

All this is not to doubt the possible merits of accurate duplex tuning but to questions its everyday existence, if ever, within the framework of Steinway's manufacturing procedures and materials.

On the related issue of non-parallel bridge notching (Allan Gilreath, Peter Mohr, and Del Fandrich, May and September issues), it occurs to me that a compromise could be achieved, if desired in the first place, between the different approaches of Mr. Fandrich and Mr. Mohr. The speaking side of the bridge could be cut parallel to the capo bar to keep Del happy while the rear side of the bridge could remain skewed to the duplex aliquot bar(s) to appease Peter. However, the resulting side bearing within each unison would be unusual to say the least. To further cloud this issue, during a recent trip to Steinway's Restoration Center I specifically asked a senior official how they treated older instruments originally equipped with non-parallel notching. The answer I received was exactly the opposite of that rendered to Mr. Mohr.

Finally, hats off to Del Fandrich for his comments in the December issue regarding any remaining manufacturers who omit capstan screws from their damper underlever trays. If accuracy is what we're after, this is the only way to go; though I'm not a fan of spooned underlevers as they require an additional regulation step to achieve a straight sostenuto tab line.

— David G. Hughes, RPT

Another Key-Leveling Adjustment Screw

John Gibson's February *PTJ* tip about modifying balance rail pins to adjust key height paralleled my own thinking of the last several years — namely, there has got to be a better way to adjust key height! Curiously, I had come up with precisely the same method of achieving this goal as John did: to support the balance point of the key with an adjustable shoulder (e.g., a threaded insert), into which the balance pin can be glued, and, by grinding flats on the tip of the balance pin, exact key height may be quickly established with the turn of a regulating screwdriver. So far so good.

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TT&T Million-Dollar Tip!

I would like to share what I consider to be a "Million Dollar Tip." Al Jeschke of Calgary, Alberta, gave this one to me and I use it almost every day.

When you have to raise pitch a small amount, like about five to 15 cents, before you start, pull up one string of each unison just until you feel the pin move. Put both hands on the tuning hammer. Don't play the keys. Do it only in the areas of the piano that are flat.

Then, go ahead and tune. Each unison group you do will have two flat strings and one sharp string. Tune a flat string first, then the sharp one and then the other flat one.

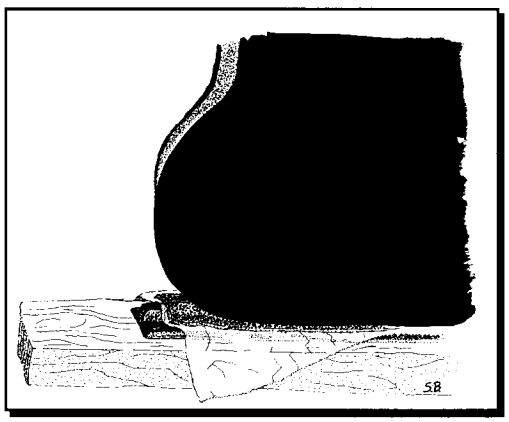
You will be amazed at the solid tuning you can achieve this way and — no more flat trebles!

— Ken Burton, RPT

TT&T Music Desk Glide-Felt Caul

I've seen a number of rebuilt pianos where the refinisher has put several narrow strips of key-bushing cloth inside the channels, others where nameboard felt was used there and got torn apart very quickly, and some where no felt was used at all, leaving bare wood to scratch against the music desk glides. The method I've been using is to make a caul consisting of a metal glide attached to a block of wood. I apply glue inside the channel, insert the new felt (key-bushing cloth is best), place one to three thicknesses of waxed paper between the caul and the felt, and press the caul into the channel (see illustration). The caul applies clamping pressure in the right places, while the waxed paper keeps glue from getting to places it shouldn't, and also provides that little bit of extra clearance to ensure a smooth, free fit of the music desk to the glide in the piano.

When the glue is dry, trim the excess felt away with a razor blade. When you're all finished, it looks and works like a factory job. If you have an assortment of metal glides with different thicknesses to choose from, you can usually find one that's just right for a given piano— just screw the right one on your block and you're ready to go.



Music desk glide-felt in use.

— Isaac Sadigursky, RPT

TT&T Thus "Spoke" Zabrocki

Here's one for all you techies out there. You're slaving away on a job hoping to get to your next appointment on time. Then you discover a broken jack spring. You rush out to your truck to pick up a new spring and find them all entwined together in a big mess. Don't you hate it when that happens?

So how do you store jack springs? Here's my solution. Bicycle spokes! Pick up an old bicycle wheel and remove all the spokes. One end of the spoke has a 90 degree bend with a flange on the end. This is the end that fits into the hub. The other end which fits through the rim is threaded and has a special nut which is used to align the wheel.

Jack springs have a small coil on one end and large on the other. The small coil fits into the jack and the large coil fits into the wippen. So you slide the first spring onto the spoke with the small coil going down to the 90 degree turn which has the flange. The small coil can not slip over the flange. Then thread the second jack spring on with the large coil butting against the large coil of the first spring. These two coils are the same size and will not entwine with each other. Place about 14 springs on each spoke and put the nut on the end.

Jack springs come in two sizes, one for uprights and one for consoles. I have a plastic tray in my supplies with a partition. There are about 8 spokes of springs for consoles and some more for uprights. The springs are always in perfect order.

Here's another idea if you want just a few jacks in your tuning kit. Use pipe cleaners. These are wires about 9 inches long covered with fuzzy stuff to clean smoking pipes. Bend over one end and thread on a few jack springs, then bend the other end over so they can't come off. Doesn't take much room in your kit.

— Sy Zabrocki, RPT

TT&T Easy Piano Bench Inventory

One of the ways a piano technician can produce a little extra income is to retail items such as piano benches to customers. It's much easier to make a sale if the customer doesn't have to wait for weeks to receive the bench. Here's a method of keeping a bench inventory which works very well for me.

First, I ordered five benches, one in each type of finish — satin ebony, high-gloss ebony, walnut, mahogany, and cherry. I ordered each of these benches with five sets of legs, one in each furniture style — round tapered, round reeded, square tapered, square spade-foot, and French Provincial. My investment was a few hundred dollars, but it paid for itself in a short time. The entire inventory is easily stored under beds in

Continued on Page 17

Q — Unremovable Action

I have a Howard grand about six years old that a client moved from California to Nashville. In the course of the move, something happened to the action either during the move or when the movers set it up here. I tried to remove it to do some work on the dampers, but the treble end will not budge. The bass end is okay, but the treble is blocked. I removed a screw from the lyre thinking that perhaps the movers inserted a leg screw by mistake and that it had penetrated the keyframe, thus blocking the action. However, it is a machine screw about 4" long and 3/8" in diameter and did not cause it. The only thing I didn't do was to remove the lyre and re-attach it. The soft pedal will not work since the action won't move. The other two function as they should. Any ideas? I consulted with a couple of RPTs here and they had no suggestions other than the one I tried.

— Ralph Black

A — From Rick Florence, RPT

Check out the bolts on the treble leg. This piano may have longer bolts in either the back leg or the lyre. Sometimes movers will mix up bolts/screws and put a long one in the front legs. When this happens the bolt may go up through the keybed and push up on the bottom of the action.

A — From Jack Reeves, RPT

Ralph, Rick Florence suggested checking the bolts holding the treble leg and I agree. I came to a Yamaha G2 with this problem. The front legs used long bolts, the back leg used even longer lag screws (with a heavy wood-screw-type thread). The movers had used a lag screw on the front leg. It went through the tee-nut that holds the bolts on, up against the bottom of the action and raised the action until it was jammed against the pinblock, and kept on turning until the lag screw sheared off in the t-nut. I tried drilling into what was left of the lag screw and removing with an easyout, but no luck, so I had to remove the keybed. Fortunately it was not glued on, only screws and guide dowels. Good luck.

A — From Audrey Karabinus, RPT

Sometimes the action rides up on the una corda lever. This or any of the bolt theories produce a noticably shortened blow distance. I had a jammed action I couldn't solve once and used screw drivers gently worked in between the keybed and keyframe, and a good flashlight to scan the terrirory in the crevice. A little wiggling and sighting should narrow it down to one area, then the various bolt or pedal theories can take over.

A — From Allan Gilreath, RPT

A Howard grand of that vintage is one that was built by Samick. Other than the action riding up on the una corda, make sure that the shipping bolt on the front of the hammer rail is not turned up too high against the pinblock. This by itself or in conjunction with shift lever problems could be causing you grief.

A — From Eric Leatha

Okay, now I know the topic is probably cold, but I had a similar problem as our colleague Tuesday night wrote about. I came to a D.H. Baldwin grand today and found the una corda not functioning. Rather than stomping on it, I pulled the cheek blocks and tried to pull the action. Wouldn't budge. I pulled the shifter out, still wouldn't budge. I tried lifting the action, no chance. Then I spied a bit of gunk that looked like wood glue on the front rail, keyframe and keybed. I thought, "sap?" I called the customer in as I pried the action free. Evidently she had had a student vomit on the piano two weeks earlier. What was left after mop-up dried hard to the action.

Epilogue: From Ralph Black

It turned out that the movers inserted the lyre bolts in the rear right leg and the rear left leg. The rear right leg bolt was the culprit. Once it was replaced all was fine. (This had been suggested by a fellow tech locally but I never tried the rear bolt, only the front. Big mistake and one that won't happen again!) Piano was tuned and customer happy. Thanks for all the input from everyone. It was very much appreciated.

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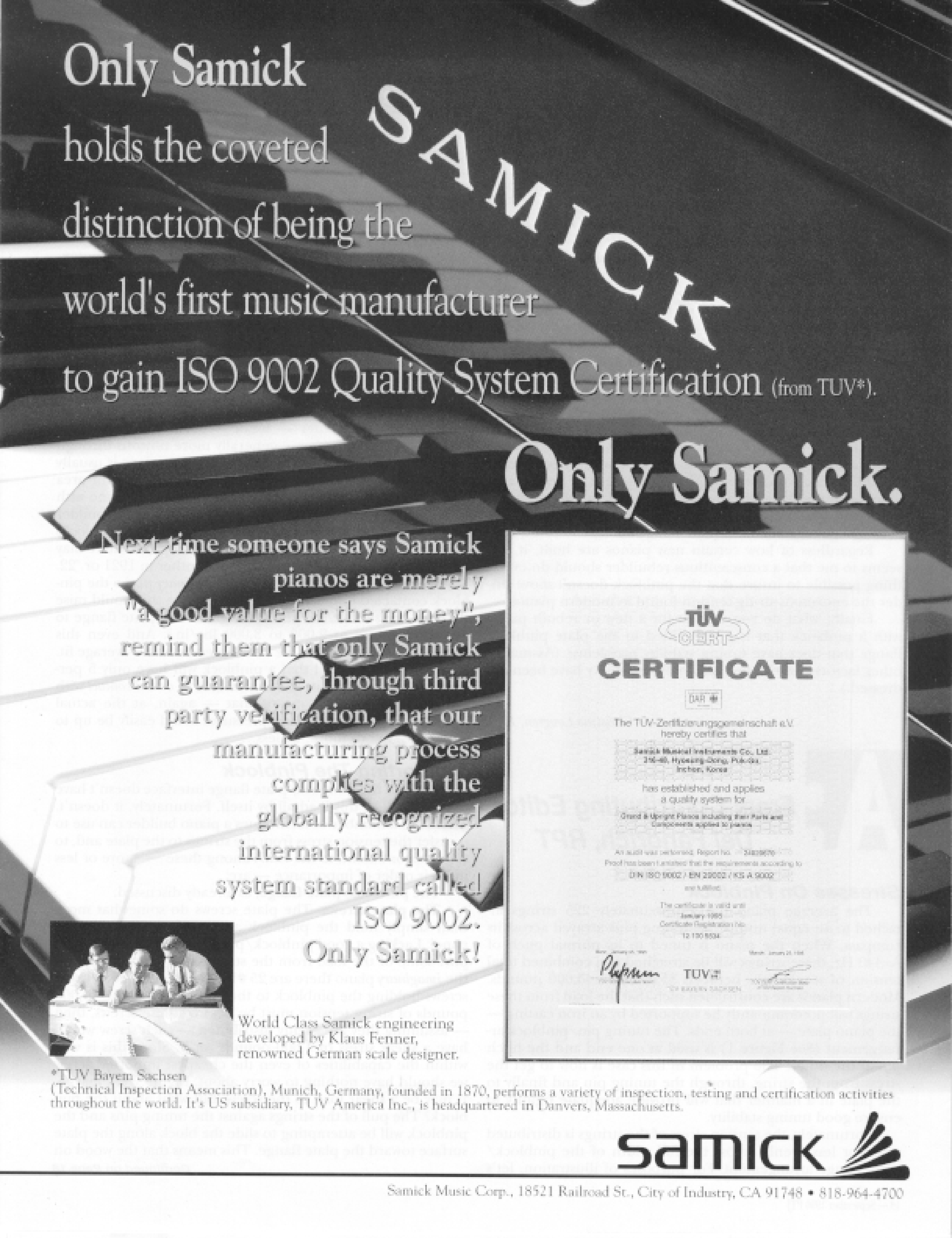
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Continued from Page 14

Q Miracle Polishing Cloth

I hope that your readers can help me locate the manufacturer of a polishing cloth that was once available in local hardware stores in the Jacksonville area. I have been unable to find "Miracle Polishing Cloth" and the hardware store folks say that the salesman who supplied them no longer calls on them. The cloth was packaged in a plastic bag about 5" by 7". The cloth can be used to polish all metals and wood. It is very effective, quick and clean, and I have been using it to polish brass piano parts for over 10 years but I have used my last one. I found a cloth at a local grocery store but it is not as good and does not last very long, and I do not want to use liquids or paste polishes. Polishing really is something that the customers appreciate.

— Donald Lykins, RPT

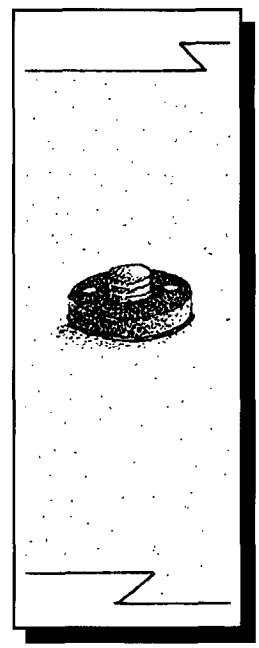
A From Rory Fader, RPT

I was approached by somebody in NY to sell these things but didn't take them on. I have seen them advertised in magazines such as Income Opportunities and Extra Income. Ads for this product are usually in small displays in these magazines. Also, check the classified sections of these and similar magazines. The sample I received (and ultimately threw out) had leaked thru its packaging and made a mess of many other surrounding papers.

A From Steve Brady, RPT

I'm not familiar with this product, but I would caution against using it without knowing what's in it. Things that seem "too good to be true" usually are. My suspicion is that the cloth might contain silicone in some form, and although silicones can produce an incredible shine, they can ultimately damage a piano finish and/or make refinishing difficult. Worse yet, if the cloth is used, say, to polish the plate around the tuning pin area, the potential for loose tuning pins is enormous.

Q Chickering Round Nose-Bolt Nuts



Can anyone tell me how to remove the nose bolt nuts on a Chickering Grand? These are disks about the size of a nickel, with small holes on either side of where the threaded portion of the nose bolt protrudes (see illustration). All of this is countersunk in the plate. I tried using the tips of the jaws of my needle nose pliers, but it felt like the pliers were going to break before the nut turned. Are these likely frozen, or is there a trick to it? Thanks in advance for any help.

— Gordon Large, RPT

A From David Porritt, RPT

I did an Erard several years ago that had this type of nut, but they were more half-dollar size. I found a socket wrench the diameter of the two holes, marked on it where the holes were and ground away 1/4" of the rest of the socket. This left two steel posts the size to match the two holes. That became my tool to work those nuts. Most of the nuts in the plate had this kind of configuration so making a tool to work them became very important.

A From Newton Hunt, RPT

Try Edmund Scientific. Thay have optical spanner wrenches that may work. As an alternative, grind a large enough screwdriver to engage the holes. If the nuts are frozen on, check to see if you can get some Liquid Wrench® into the assembly to free up the threads.

Edmund Scientific: 609-547-8880, one great toy store.

Q&A/Editor's Roundtable

A — From Richard Bittner, RPT

Buy two nail punches that will fit in the holes of the disk. Then grind them down about 1/8 of an inch so they will still fit firmly in the holes. Grasp the two punches with your parallel pliers, #235 in your Schaff Catalog. Then have your partner hold down the punches with the palm of his hand. Turn the disk counterclockwise and it should come right out.

A — From Jack Kehe

I've had good luck in the past with with Liquid Wrench®, as mentioned in another reply, and round-nose pliers and Vise-grips®. After dousing with LW, insert the pliers, tap a bit to loosen the corrosion, grab the pliers with the Vise-grips® just above the nut and turn slowly. The Vise-grips® will stabilize the pliers somewhat and also give you leverage to turn with.

A — From Don Mannino, RPT

I believe the name for the proper tool for this is a "Pin Spanner." These are available from automotive tool sources. They look something like pliers, but with pins on the tips facing to the side of the tool. These are engaged in the holes, and the threaded washer will spin right out — unless it is really tight, in which case the pins will snap off! Liquid Wrench® might help, but be sure you clean it off completely, or it will discolor most plate finishes, or cause problems when the plate is refinished.

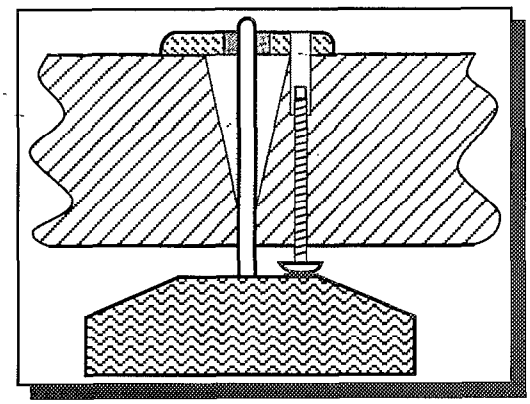
A — From Richard Anderson, RPT

The easiest way to remove any nose bolt nut, disk, acorn etc., is to hold it with your fingers while you turn the nosebolt down. Reverse for installation. The tool I use for the Chickering nuts is the proper size steel rod bent into a "U" or horseshoe shape that can be held with an adjustable wrench across the two legs of the "U". Good luck!

Letters

Continued from Page 10

My next task is to square up the keys, which are leaning this way and that, before beginning the leveling job. But now, after I've bent the pins so nicely, the key squaring work will be destroyed when I turn the bent pins to adjust the height. Yes, I suppose I can re-square the keys but how many times do I want to go back and forth?



So, I shelved the idea until recently when I pulled the action out of a Ludwig grand on a service call. There, about a half-inch in front of each balance pin was a hole about the size of a hammer shank drilled into the top of each key. Shining a flashlight into one of the counterbored holes revealed what looked like the top of a drop screw. Beneath the key I spied the *bottom* of what looked like a drop screw resting on a strip of white felt glued onto the length of the balance rail. There were no punchings! The keys rocked on the head (or foot) of the "drop screws."

Since I was pressed for time, I didn't take the stack off to document the information in more detail but I was able to create the accompanying drawing to illustrate what I did see. It was, at least, gratifying to know that there *is* another way to level keys, a method simple enough to incorporate in an existing piano and whose adjustment doesn't disturb key squareness. There is the matter of changing the strike ratio but I'm sure there must be a way to compensate.

And, yes, the keys in that Ludwig were perfectly level.

— Tom Cole, RPT

Tips, Tools & Techniques

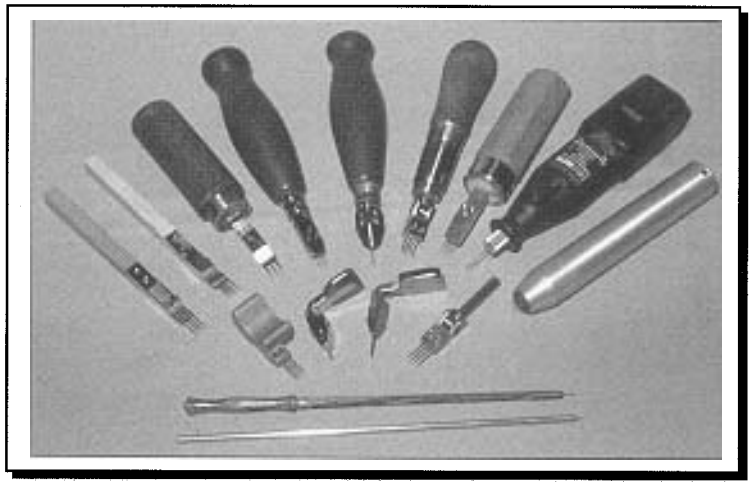
Continued from Page 12

my home, and having this inventory ensures that I always have the right bench for any customer; they don't have to wait. As soon as I sell a bench/legs combination, I immediately reorder that bench and legs, so the inventory remains complete.

— Isaac Sadigursky, RPT

Voicing Tools for the Piano Technician

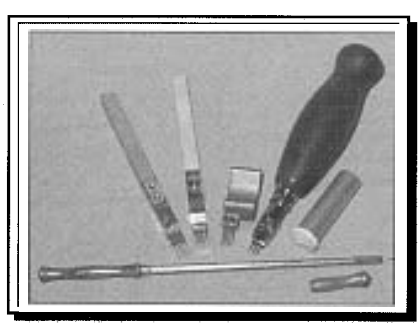
By David Severance, RPT
Eastern Washington Chapter



Like most piano technicians, I'm always delighted to find a new tool that makes the job easier, faster or better. These tools are often available only through small specialized companies or individuals, not the large mail order supply companies that publish catalogs. In the last article I wrote, describing hammer boring jigs (see June '95 *PTJ*), only one was listed in any kind of a supply catalog (the Brooks hammer boring jig). The Renner jig was too new to have been featured in any literature and the other two jigs were manufactured and sold by individuals who do little if any advertising. In addition, there are also tools, products and services available from the major piano supply companies that for various reasons are not listed in their catalogs. The profits on a new product or service might not offset the cost of a mailing let alone the reprinting of an entire catalog. A good share of the following voicing tools are not listed in the suppliers' catalogs. These tools were sent to me by the manufacturers and suppliers at my request to be reviewed for this article and represent a cross-section of the tools in this genre. I hope some of this will be new information that you will find useful.

Renner

Lloyd Meyer of Renner, USA sent four beautifully made German voicing tools and one domestic tool. The two 4 needle tools (1430 A and 1430 B) are identical except for the neck angle. The angled neck tool facilitates maintaining the correct angle while working with the far side hammer shoulder on a grand action. The needles are cut to length and inserted into the end of the tool and into the tool body where they are held in place with slot head machine set screws. The holes are large enough to accept the needles intact if you choose to, however, because of the relatively small rectangular handle and light weight I would use this tool for fairly shallow needling. These are two extremely well made tools that will last a lifetime. The upright voicing tool (1430 D) holds four needles that have to be cut to length. As with the two previous Renner tools, slot head machine set screws hold the needles in place. This tool fits between the thumb and second finger. The index finger fits along the side and serves to guide the tool. The tool is a solid cast piece of metal that weighs 2.5 times as much as the two previous tools and yet is very compact. The three-needle voicing tool (1430 E) is a much larger and heavier tool than 1430 A or 1430 B. The turned wooden handle nicely fits the hand. Needles with the eye end cut off are inserted into the end of the tool and held in place with hex head set screws. A Wiha 1.5 mm hex head wrench is provided with the tool. Since the needles do not butt up against the body of the tool, as in the 1430 A and 1430 B), absolute accuracy in cutting the needles is not necessary. An aluminum can fits over the tool head and neck to protect the needles. Two O-rings hold it in place and at the same time, interestingly enough, form a waterproof seal. Again, this is a beautifully designed and made tool for some serious deep needling and yet still light enough to use all day on a set of "bricks" if you had to.



Voicing tools from Renner.

The "chopstick" single needle tool is a turned piece of exotic hard wood about 8 inches long. Lloyd tells me that no two are exactly alike. It is obvious that a very talented craftsman has manufactured this tool. The needle is friction-fit in place and can be covered when not in use with a matching turned wooden cap. According to the literature, the tool's lightness and flexibility give the voicer a more accurate feel of exactly where to relax the felt instead of simply jabbing the hammer with multiple passes.

Pianotek

Pianotek sells the same tool as the Renner 1430 E and calls it the "Ultimate Voicing Tool" (VT-3W). In addition they sell its brother, the "Ultimate Single-Needle Voicing Tool" (VT-1P). This tool uses a collet that is specifically designed to hold a single

Pianotek's lineup of voicing tools.

needle. The two tool's handles and weights are identical. The tool can also serve as a pin vise. The JVT-2 is a three-needle upright voicing tool that is for use between the thumb and fingers. It is slightly different in concept than the Renner upright voicing tool in that for insertion of the needles it relies more on the leverage between the thumb and second finger created by the L-shape. The needles are held in place by hex head machine set screws.

APSCO

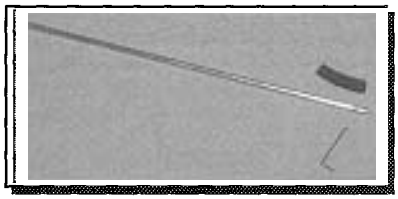
American Piano Supply Co. sells a three-needle upright voicing tool that looks very much like the Pianotek JVT-2. Instead of set screws for the individual needles in the head, the American 16414 uses a plate that tightens down over the three needles with two slot-head machine screws and then has one slot-head set screw for the middle needle. This design is unique to American Piano Supply and seems to work very well. Because the needles do not have to fit through holes in the head of the tool the needles can be used intact or cut to length. A U-shaped flat metal clip protects the needles (and your fingers) when not in use.

APSCO voicing tools.

The three-needle grand voicing tool (16413W) uses the same plate/set screw combination that their upright tool uses. The handle is a four-inch walnut cylinder that has been weighted. If you like heft in your voicing tools this is the one for you. This puppy weighs nearly twice as much has the six-inch Renner 1430 D and the identical Pianotek VT-3W. The same metal clip protects the needles as in the 16414. The 160955 and the 16065 are the same tool except the former is for use with a combination handle and the latter comes with a handle. The needles must be accurately cut to length to fit against a ledge in the head of the tool. A corrugated piece of metal forced against the needles with two set screws holds the needles in place. The head of the tool can be adjusted from a straight position to either 45 degrees for upright hammers or 135 degrees for use on the far shoulder of grand hammers. The 16065 uses a soft wood file handle that has been adapted for use with this tool.

Glen Hart

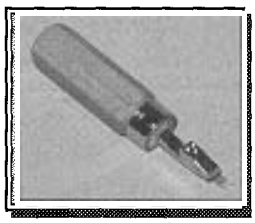
Glen Hart of Hart's Piano Shop (famous for his "Hart Butterfly Spring Tool") fabricates a very nice nine-inch "chopstick" voicing tool. His "Thru-The-Strings Grand Voicer" is made from a piece of 5/32" brass rod nine inches in length. The single needle is held in place with a tiny hex-head set screw. A hex key is provided along with a rubber cap that fits over the needle. Glen says in his tool flyer the next time you need to do this job you can feel like a professional with a real tool instead of someone using a chopstick with a pin glued in the end which is, I am ashamed to say, what I use.



Glen Hart's "Thru-the-Strings Grand Voicer."

Yamaha

Yamaha sells a three-needle grand voicing tool that is a common sight in piano technicians' tool kits. The six-inch long round handle has storage for a hex key and needles. The opposing set of hex head set screws that hold the needles in place make this tool unique. By alternately tightening the opposing set screws you avoid bending and thus weakening the needle as can happen when one set screw is used. Since the needles pass through the head of the tool and are securely held in place by the set screws there is no need for absolute accuracy in cutting the needles to length.



Yamaha voicing tool.

Power Needling

I have two motorized voicing tools courtesy of Schaff Piano Supply Co., with plenty of horsepower (sound effects please, Tim Allen). The "Easy Voice," is a three-needle mechanical needling attachment for the Foredom tool. Many of you have seen the "Easy Voice" demonstrated at PTG conventions. The rotary motion of the Foredom tool is converted into an oscillating motion at the needle, which makes the penetration into the hammer much easier. The depth of penetration is completely controllable. Although I initially had some misgivings about this tool, I can see a place for it in a shop setting. If you are experienced in pre-voicing a particular set of hammers, I can't see why this tool wouldn't make your job easier.

The other mechanized voicing tool was the brainchild of Wally Brooks, according to Herb Johnson at Schaff. It consists of a Dremel Model 750 with a collet designed especially for a needle. As with the "Easy Voice," the motion of the needle, which in this case is rotary rather than back-and-forth, reduces the effort of penetration. In experimenting with the tool, I found that it required very little effort to penetrate the hammer with the entire length of the needles; certainly this is not the case with 3/4" needles in an ordinary voicing tool.

Dremel® Model 750 (left) and Easy-Voice® handpiece for Foredom tool.

Evaluations & Recommendations

With two exceptions, I found no serious design or manufacturing defects in any of the tools. The ferrules of both the Yamaha tool and the American 16413W arrived fitting rather loosely. My understanding is

Voicing Tools for the Piano Technician

Continued from Previous Page

that a ferrule is designed to fit tightly around the shank end of the tool to prevent the wooden handle from splitting at that point of stress. On both of these tools the ferrule was more decorative than functional because a small brad was the only thing holding it to the tool.

All of the tools mentioned in this review can do the job for which they were intended. My personal opinions are as follows. My favorite four-needle tool is the American 16065 (or the 160955 for the combination handle), probably because I have used the 160955 for years and I know how to make it work for me and it's really cheap. I also like the versatility of being able to use it for uprights too. The Renner 1430A and 1430B are beautifully made tools but the handle is smaller than I like and the tool is too light to suit me. However, I have a colleague who raves about the two tools.

For the three-needle grand voicing tool my favorites were the Renner 1430E and the Pianotek VT-3W. They are the same tool and an outstanding example of good design and execution. My second choice would be the American 16413W, a good value at $29. Although I own a Yamaha three-needle tool and I think that opposing sets of hex-head set screws is the superior way to secure a needle, I like a heavier tool.

For needling upright hammers, the Pianotek JVT-2 and the Renner 1430D would be excellent choices. I like the Pianotek tool because of the opposing sets of hex-head screws for securing the needles, and I like the compactness of the Renner tool. The American 16413W is a larger and less elegant version of the Pianotek tool, but, at a third of the price of the other tools, it bears consideration.

Both of the "chopstick"-type voicing tools could be good choices, but overall the simplicity and ruggedness of Glen Hart's "Thru-The-Strings Grand Voicer" wins me over. For $15, I think this tool is a "must have" for the piano technician. I'm sorry — but I'm not sending this one back, Glen! I recognize that the Renner "chopstick" tool is really a work of art but it seems to be a little too fragile for me; I'm afraid it would get broken in my tool case.

Of the motorized tools, I would buy the Dremel 750. Even though I can see a place in the shop for the "Easy-Voice," I really don't think there are too many shop situations where this tool would be cost-effective. On the other hand, the Dremel 750 really does make deep needling a breeze, plus for $ 38 you get a cordless Moto-tool®, a removable battery pack, a three-hour charger and five bits.

Voicing Tool Sources

Company	Cart#	Description	Method of Securing needles	Construction/Comments	Wt.	Price
Renner USA	1430A	4 needle grand voicing tool	4 slot head set screws	5" rectangular handle, straight neck	.9 oz.	38.40
P.O. Box 1223	1430B	4 needle grand voicing tool	4 slot head set screws	5" rectangular handle, angled neck	1 oz.	35.10
Weston, CT 06883	1430D	4 needle upright voicing tool	4 slot head set screws	1" handle for use between thumb and fingers	2.5 ozs.	41.90
Phone: (203)221-7500						
Fax: (203)454-7866	430E	3 needle grand voicing tool	3 flex head set screws	6" round handle, includes hex head wrench	6.4 oz.	150.00
		1 needle grand voicing tool	Friction	8" "chopstick" tool for needling harness through strings	3 oz.	35.00
Pianotek Supply Co.	VT-3W	3 needle grand voicing tool	3 hex head set screws	6" round handle, includes hex head wrench &needles	6.2 ozs.	150.00
401 W. Marshall Ave.						
Ferndale, MI 48220	VT-1P	1 needle grand voicing tool	collet	6" round handle	6.2 ozs.	115.95
Phone: (800)347-3854	OVT-2	3 needle upright voicing tool	3 hex head set screws	1" handle for use between thumb and fingers	.7 oz.	35.00
Fax: (810)545-0408						
American Piano Supply	16412	3 needle upright voicing tool	plate/machine screws			
242 South Parkway						
Clifton, NJ 07014				1" handle for use between thumb and finger	1.8 ozs.	13.00
Phone: (800) 457-4266	16413W	3 needle grand voicing tool	plate/machine screws	4" weighted round handle	1.1 ozs.	29.00
	160955	4 needle adj voicing tool	plate/machine screws	2" for combination handle	1 oz.	6.00
	16065	4 needle adj voicing tool	plate/machine screws	4" round handle	3.1 oz.	7.60
Hart's Piano Shop		1 needle grand voicing tool	1 hex head set screw	9" "chopstick" tool for needling hammers through strings	.9 oz.	15.00
P.O. Box 40685						
Grand Junction, CO 81504						
Phone: (970) 434-5358						
Yamaha Corp of America	TK610002	3 needle grand voicing tool	opposing hex head set screws	6" round handle with storage for hex key and needles	3.3 oz.	90.63
6600 Orangethorpe Ave						
Buena Park, CA 90620						
Phone: (800) 854-1569						
Fax: (714) 527-5782						
Schaff Piano Supply Co.		3 needle mechanical voicing tool		6" round handled attachment "Easy Voice" for the Foredom tool		350.00
451 Oakwood Rd.						
Lake Zurich, IL 60046						
Phone: (800) 747-4265		1 needle mechanical voicing tool	collet	Dremel Model 75C with specially designed collect		35.00
Fax: (708) 438-4615						

Traditional Voicing Techniques

Explanations of how to voice a piano by Virgil Smith, RPT, and the late Victor Jackson.

Voicing

Victor H. Jackson

(*EDITOR'S NOTE: Transcript of class taught by Mr. Jackson, reprinted from the May, 1964, PTJ. — S.B.*)

When we speak of tone regulating we visualize doing something to recondition the hammer felt, but when we examine the subject closely we see that we are entering into a many phased situation. Almost anything we do to a piano, from casters to hinge pins, can have some effect on the tone of the piano. Tone is the ultimate end of our endeavor for that is what our customer most desires. Of course the touch must be pleasing and the appearance of the cabinet and keys likewise satisfactory, but if what the customer hears is disagreeable, then all the other good points are overshadowed. So the more we can do to produce the ultimate in tonal value the greater will be the demand for our services. Always to be kept in mind is *what the customer wants*, not what we think he or she ought to have.

In tone regulating (or voicing if you prefer that term) just what are we striving for? There is no definition for the "ideal tone" because of the variance in tastes or preferences as well as in piano characteristics. Nor can it be said there is only one way to obtain optimum tone, so what I do here today does not imply that my way, alone, is the correct way, or that you must do exactly as I do.

If I find a few harsh or metallic notes when I tune a piano, I am inclined to even them out, especially for a repeat customer. I do not bother to call the customer's attention to what I have done but when she expresses pleasure because I have "tuned out those bad notes," I know that the little extra work involved has not been wasted. If, on the other hand, I feel that a complete tone regulating job is needed, I do not go into a sales talk about it. I wait for the customer to tell me what she likes or does not like about her piano and let our conversation lead into whatever selling is necessary. The ever important thing is what the customer wants; not what I want.

I would like to point out that *words* are among our most valuable tools and like any tool they should be handled with care. We technicians can talk to each other about "hammer filing," "deep needling," "shoulder doping," etc., but such words can often be disturbing to a piano owner, especially "dope." I prefer the term Tone Regulating to Voicing because I think it conveys more meaning to the piano owner. And we actually should *think* of it as tone regulating. We do not, in a sense, give the piano "voice." That was done by the craftsman in the piano factory—all the engineering skill which originally gives the piano its voice, or tone — has been done before the piano comes into our hands. Our job is to restore, as far as possible, whatever of the tonal quality has been lost through the years.

Now, assuming that the customer wants to have some tonal restoration work done, we must make sure that she understands exactly what to expect after we have finished the job. We must explain that although there will be no change in the touch, she may get the impression that it is heavier than before because it will feel different. So before I start I discuss this aspect with her and even weigh off a few keys to show her what the touch weight is. Then if she later complains of the touch being heavy I can repeat the weighing to show that there has been no change. This satisfies her and protects me.

If the customer is one whom I serve regularly, I already have a good idea of her preference, but it if is a new customer I must be guided by what develops during a discussion of the piano. In either case I make haste slowly. If possible I let her hear some of the results as I proceed with the work. In the early stages I do a little less rather than too much. I can always go further but to go the other way is difficult. *An over voiced piano presents a major problem, a serious situation.* So—be cautious. I once heard a philosopher say, "Success is 90 percent diagnosis and 10 percent treatment."

Now for a moment let's look at the job from a commercial angle. Where do we start, where do we stop and how much shall we charge? The charge must be fair to both the technician and the piano owner; not a $100 job for $75, nor a charge of $120 for a job worth only $60. I can not suggest a charge here because no two jobs are exactly alike. Some can be done in the home and at other times the action must go to the shop. For the purpose of this discussion I will consider only the shop jobs and I will try to cover all angles so that you can apply them to your individual circumstances as needed.

First, let's think of a point that is so elementary it is often overlooked. The piano here (demonstrating) we will assume to be in good tune, the action well regulated and the tone regulating finished; therefore, from this point on *every variation in tonal quality and volume is the direct result of a variation of hammer speed.* This being true it then follows that everything which detracts from the pianist's control will also detract from the tonal results, and, therefore, from the performer's enjoyment of the piano. And that, in turn, influences our reputation and our income.

Do not accept as fact that key-dip, hammer travel, damper life, escapement and striking point are established by the technician and are beyond any control or variation by the pianist. The one and only factor which the pianist can control and vary is *hammer speed.* Hammer speed is five times that of key speed, for when the key travel is 3/8" the hammer travel is 1 7/8", a ratio of 5 to 1. The pianist's control, moreover, is limited to two-thirds of the actual key travel distance because one-third of the travel is consumed by escapement and aftertouch. After the escapement the pianist has no control whatever over the speed of the hammer. The hammer travels with whatever momentum has been imparted to it and it must rebound instantly from the string.

With this fact in mind we must recognize that wherever there is motion there is friction. In this action I have before me I count 18 friction points. Other actions have more and this does not include abnormalities such as warped keys, hammer interference, expanded knuckles, etc. Some of the friction points are minute, but 14 of those I counted do affect the hammer speed. A small amount of friction can sometimes be ignored and a large amount at some point can be tolerated, but

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when all are combined they may seriously hamper a good job of tone regulating. Now if that is clear to you then let us go to work; there is much to be done before we can get to the actual tone regulating.

Visualize a piano perhaps 20- to 25-years-old. It has had considerable use and though tuned quite frequently it has had a minimum of other service. I have been requested to put the piano in good condition. (The piano I have here for demonstration purposes is not in need of all the work required by the piano we are visualizing, but for this discussion I will proceed as though it does need such attention).

This will be a shop job and there are certain things to be checked before removing the action from the premises.

1) Key level: okay at the ends, low in center

2) Hammer spacing: majority must shift to treble, shim stop block and space hammers

3) Check for key frame slap

4) Clean the keybed, see about dried grease, studs, spring and rear hooks

5) Measure string height

6) Service the lyre and trap work, lubricate trap pins and springs, look after lyre braces, see that pedals are firm and free-moving, replace any hard felts, see to the proper action of the pitman rod and guide rods, tray spring, tray bearings, replace bushings. The proper condition of all these points is important to the tonal results and customer appreciation.

7) Tuning not considered now, but if pitch is to be raised now is the time to do it.

With the action in the shop we must look after those points of friction. A thorough cleaning of the action is of course necessary. Check for any needed repinning or shrinking of bushings; loose hammer heads or knuckles; hammer heels which may need roughing; check springs for corrosion, lubricate spring grooves; space repetition levers; card back rail felt and knuckles (no needling here), card capstan felts; metal polish capstans; tighten rail screws.

Check the keys at center rail for tightness or looseness and polish the pins (no steel wool or sandpaper at these points); clean keys, level them and rough in the dip. With top action in position regulate jacks as per measurement made in the piano, establish hammer throw; check let-off and drop (I prefer excess drop at this time); set repetition lever height and then continue with the usual action regulating procedures, observing the service manual specifications for final, exact measurements as far as possible. Conditions may require some variation.

We are now ready to go to work on the hammer felt needling. The regulating of the action, although not actually a part of the tone regulating work is necessary to insure a smoothly functioning action as nearly friction free as possible. I have not previously mentioned reshaping (filing) the hammers although of course that is necessary before the final action regulating is done. We are not dealing with new hammers. New hammers are subjected to pressure in the making but used hammers suffer additional pressure at the striking point in proportion to the extent to which the piano has been played. Usually the technician can estimate the use to which the hammers have been subjected.

The mythical piano we are talking about has had hard usage so I will be guided in my initial steps by the feel as I pinch the hammers. These hammers are packed hard and I would not be able to penetrate the felt if I used a 3- or 4-gang needle tool. So I start with a single needle, #5, one-half inch long. For a test I will make a few stabs on each shoulder of two or three hammers, and since it is well packed I will come up a bit closer to the tip than normal. Discretion is need here. The maximum limit would be *that the untouched tip be as wide as the molding is thick* at the point where the felt is glued. I increase the number of stabs as I work toward the bass and decrease them as I approach the treble. I work on about four hammers at a time before testing for tone quality.

■■■

From here on Mr. Jackson's work consisted of visual demonstration which cannot be put into words. It can be said that after going through the piano with the one needle he followed with three needles 1/2" in length, then four needles 1/4" long, and next 5 needles 1/8" long *over the tip.* Throughout the needling he made frequent tests and this included shifting the action so as to strike two strings instead of three. He urged that all tone regulating include the two-string test. He also demonstrated how one or two hammers that still stand out after the piano has been assembled can be softened by the use of one long needle inserted between the strings without removing the action.

He said that new hammers require more than one going over and that time should be allowed between the operations for the felt to creep back, which it will do. He said he does not iron hammers that are too soft, but instead used the eight-to-one lacquer solution. This chiefly in the top treble. He said that what he was striving for was a resilient outer surface with a firm center and that ironing reverses this condition.

The Marvel of Voicing

Virgil E. Smith, RPT & M.Mus.

Voicing is the crown jewel of piano technology. Voicing an undesirable sounding instrument can change it into a marvelous sounding instrument. Unless a piano is in proper voice, it will still sound terrible no matter how well it is tuned and regulated. Voicing is the one operation that provides the greatest obvious difference to the customer. It is important that every tuner who plans to service fine pianos for musicians develop voicing skills. You cannot afford to leave home without it. It is important that one can still be able to become an RPT and not be able to voice a piano.

A tuner can ruin his or her reputation in a hurry by servicing musician's pianos without voicing them. No matter how well the piano is tuned, it still sounds terrible because of poor voicing and the owner will assume that it was a bad tuning. Many piano owners have the idea that there are two kinds of piano service: 1) tuning the piano, and 2) rebuilding the piano. If the piano doesn't need rebuilding then it should sound fine when tuned. They don't realize that with proper service a piano can be made to sound and play as good as or better than when new. It can be better than new if the dealer hasn't prepared the piano properly. If the piano were not properly prepared or has not been tuned for several years, it could take two days to bring it to this level, but once it is there it takes only a little longer at each service call to keep it functioning at that level until it needs to be rebuilt. The tuner must acquire the skills necessary to provide this kind of service, then sell the customer on the program.

Practically every service operation on a piano affects the

sound. Several years ago Yamaha demonstrated that every regulation step affects the sound I frequently have solved tonal problems by correcting the let-off. Tuning can also change the voicing of a piano considerably. It naturally follows that the piano should be well regulated and tuned before attempting to do any voicing.

Though practically every aspect of piano service affects the sound, by far the most important factor in tone production is the hammer. The shape of the hammer, the condition of the hammer surface, the relation of the hammer to the strings, and the hardness or softness of the hammer all play an important part in determining the sound the hammer produces. There are many different voicing techniques being advocated today, and they all seem to work. Probably no one has been able to compare them all to see which actually is best. The main thing is to find a technique that works for you, perfect it, and use it when necessary.

One of the most important factors in tone production is the shape of the hammer. All loose felt from broken layers should be removed leaving a continuous layer of unbroken felt under tension. The hammer should look like a new hammer only smaller. Once it is correctly shaped, the entire surface should be polished by gang filing with strips of fine sandpaper. Gang filing will ensure that the top of the hammer is a straight line.

After the hammer is reshaped its relationship to the strings must be checked. First check for spacing and travel. If the hammer is straight across the top but still does not hit all three strings at the same instant, the strings must be leveled so it does. This is done by pulling up the lower strings of the unison at the agraffe or capo bar. This is checked by blocking the hammer against the string.

After string leveling the piano needs to be tuned, being especially careful to leave every unison beatless. Only then is the piano ready to be voiced. Voicing is necessary when notes are either too bright or too dark. Whole sections may need voicing or just a few notes that stick out from the rest here and there. A consistency of tone quality from note to note is what is important. Customers may prefer different levels of brilliance, but the tone must be consistent at whatever level. Most voicing today involves cutting down notes that have gotten too brilliant through playing. New hammers start out more brilliant because of today's demand for more brilliance, but as they harden through playing the tone becomes objectionable. Occasionally it may be necessary to build up the tone in certain areas when dealing with brand new hammers.

Practically anything that is done to the hammer to harden or soften it will affect the tone the hammer produces. Methods for hardening the hammer include: 1) a combination of lacquer and lacquer thinner applied on the base of the hammer with the action on end, or on the shoulders or the top, 2) an acetone and key-top solution applied on the shoulders or the top, 3) ironing, and 4) pounding the top of the hammer with a heavy object. Hammers may be softened by needling on the shoulders, sides, or top of the hammer, or by applying steam or other liquids.

Normally a hammer is softened by needling on the shoulders. The use of liquid is reserved for extremely hard hammers where needling provides little or only temporary results. While other approaches have been introduced successfully in recent years it is recommended that one stick to the shoulder needling approach until one has considerable voicing experience.

There is subtle relationship that must be understood between the shoulders and top of the hammer. The top must be firm enough to transmit the energy from the hammer to the string, and the shoulders must be firm enough to support the top, but soft enough to flex when the hammer strikes the string. The top may seem too hard if the shoulders do not flex, and seem too soft if they do not give enough support. The top can be too hard, but should not be needled until one is sure the shoulders are soft enough to flex properly. If the top of the hammer is too soft, it can be helped by firming the shoulders with acetone key-top solution. Acetone key-top solution can also be applied very carefully on the very top of the hammer. Care must be taken when needling the top of the hammer, because it is easy to kill the tone and dramatically reduce the volume. It can be tempting to voice on top of the hammer because results can be had so quickly, but it is better if the desired tone can be obtained by keeping the hard top and needling the shoulders.

Before voicing it is important that both the customer and the technician have a clear understanding of what is a beautiful, desirable piano sound. Since there is quite a range of acceptability in this area it is important to understand the customer's preference. Not all brilliance is undesirable, brilliance can be beautiful, but it is important to be able to distinguish between ugly, harsh, tinny, overly brilliant sound as opposed to a beautiful brilliant sound. Likewise there is a difference between a dull, dead sound, and a beautiful, warm, rich mellow sound. The object in voicing is to create a variety of tone colors, ranging from a rich mellow to a beautiful brilliance. If it is difficult or impossible to play a soft mellow sound, the hammers are too hard, but if it is difficult or impossible to produce a loud, brilliant sound, the hammers are too soft. It is possible to voice mellowness into the tone without destroying the volume or brilliance.

It is very easy to over-voice, and it happens all too often. This happens when one needles too much or in the wrong places. The tone is very soft, has no carrying power, and is lacking in volume and brilliance. This need not happen if one will voice by layers. This means voicing only those notes that are obviously brighter than the surrounding notes. Once this top layer is voiced another layer of notes brighter than the rest will appear, and when that layer is voiced another layer will appear. This procedure is continued until no note is brighter than its neighbor. Playing all the notes involved between layers will help avoid voicing any note below the lowest level. The ear hears tone quality in relative relationships rather than absolutes. The same note will sound dark when surrounded by brighter sounds, and bright when surrounded by darker sounds, that is why it is necessary to deal with each tone as it relates to its neighbors rather than how it sounds individually. It is amazing how dull sounds suddenly become beautiful when their brighter neighbors are voiced down.

The top Steinway technicians now voice only on the top of the hammer. By using acetone and key-top solution and needling they get excellent results in a very short time. However, it has been demonstrated that the tone is still better when all the dead felt is removed from the entire surface of the hammer and the whole hammer polished until it is very smooth. This technique, though very successful, is not recommended for beginners.

The touch used in voicing is critical to successful voicing.

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Playing up and down the chromatic scale is the best way to detect any unevenness in the tone. Consistency in the stroke is very important. The differences must be in the notes themselves, not in the way the note is struck. Approach the notes in question both from above and below to get a clearer picture. Notes should be tested for evenness at various dynamic levels.

Always be aware of voicing on every piano you see and service. The voicing will change as you regulate and tune, but it will help prepare you for voicing when the time comes. Voice whenever possible, even voicing only a few notes will often drastically change the overall sound, and make a very happy customer. Only by repeated voicing will you gain the experience to be an expert voicer. There are loads of pianos out there that need to be voiced, and the Guild cannot successfully market its product to the music community until a majority of its members become excellent voicers.

Hammer Reshaping

Virgil E. Smith, RPT & M. Mus.

Hammer reshaping yields probably the most spectacular results of any operation in piano service, is probably the most neglected operation in piano service, and probably the most difficult operation in piano service to thoroughly master. Even though it is such an important part of piano service, and the hammer must be correctly shaped before attempting any voicing, few technicians do any hammer filing, and still less do correct hammer filing.

To do correct hammer reshaping one must understand that originally the hammer felt was one flat piece composed of many thin layers of felt. When shaped the outside is put under tension and the inside put under pressure. This combination of tension and pressure is what enables the hammer to transmit energy from the key to the string so effectively. The rounded point causing the hammer to strike the string in one small place and a smooth surface of the entire hammer are important for best tone production.

As the hammer is played, changes take place that cause the tone to deteriorate that can only be corrected by reshaping. Grooves formed gradually lengthen and deepen causing more hammer to strike the string. Eventually the top of the hammer becomes flat or even concave. Gradually the outer layers of felt are severed at the top causing them to lose tension and hang as dead weight on the sides of the hammers killing the tone. This is probably because the dead felt interferes with the free flexing of the remaining continuous layers of felt. Ridges between the grooves come up between the strings when the hammer strikes the string and do what felt does so well, it damps the sound, which makes it necessary to strike the note harder to get volume which makes the hammer wear out faster.

Correct reshaping of the hammer is so difficult because it involves removing all of the dead broken layers of felt without damaging or breaking any of the remaining continuous layers of felt. No matter how much felt is removed the result should be a hammer shaped like the original only smaller. If the hammers have been allowed much wear without reshaping, considerable felt may have to be removed before the first continuous layer of felt under tension is exposed. The process involves removing the dead felt up from the bottom of both sides like peeling a banana. I use a paddle with 50 grit sandpaper glued on both sides. File at the bottom until a layer is started, then bring it up until it disappears at the top of the hammer. File only at the bottom of the layer, don't file the layer, just peel it up with the file. If there is still evidence of broken layers, more needs to be filed; if the layer cuts into the crown, too much has been removed. Try to avoid this. I am happiest when there is still a faint evidence of string cuts no more than an eighth inch in length, for I then know I haven't taken too much off the top.

After the hammer has been restored to its proper shape and the surface of the hammer is one continuous layer under tension, that surface should then be made as smooth as possible. This often greatly improves the sound. This can be done in a few minutes by gang filing with wide strips of sandpaper, I begin with 80-grit, then 150-grit, and finally 220-grit. This procedure can be done frequently to improve sound before a concert or whenever the surface of the hammer becomes fuzzy.

New hammers often come with much loose felt on the surface. They should be filed until all this is removed, and one smooth continuous layer is evident. Use the same procedure as in reshaping older hammers as described above. Until this is done along with complete regulating and tuning, no chemical should be added to the hammers to build tone, for reshaping and polishing the entire surface of the hammer may build the tone enough that chemical is not necessary.

How often should hammers be reshaped? It depends largely on how and how much the piano is used, but they should be done whenever the tone deteriorates, whenever ridges develop, and whenever the shape of the rounded point is changed. If the hammers are badly worn and misshapen after hours of playing with nothing done to the hammers, reshaping can be a major project requiring two hours or more, but if done regularly, much less time is necessary. After the initial operation they may be filed several times in just a few minutes with gang filing. Eventually the slanting hammers will have to be reshaped one at a time with a paddle. The initial filing may be done in the shop or at the piano, but the subsequent filings should be done in the home or studio as the customer will object to having the action removed so frequently.

The selling point for regular hammer filing is the fact that hammers last longer if filed regularly. This is only true if hammers are filed correctly, it is not true if filings remove more felt than is necessary. Customers must be convinced, for many are reluctant to have their hammers filed because they fear they will need replacing sooner. Regular filing will ensure that the tone quality will remain the best. Some feel that the let-off needs to be corrected after each filing — not so. If the let-off needs adjusting after filing it needed correcting before filing, for correct filing does not change the spot where the hammer strikes the string.

Generally reshaping greatly improves the tone quality, but when much felt is removed the remaining felt may be hard enough to produce a harsh, unpleasant sound. Voicing on the shoulders will then be necessary to produce a desirable sound. Much voicing may create loose felt that will need to be removed by gang filing to create the best sound.

Reshaping hammers should be a regular part of every technician's service procedures. The tremendous improvement in sound will give great satisfaction to both the technician and the customer. The time and effort spent to perfect this technique will reap great dividends.

Alternative Voicing Methods

By Steve Brady, RPT
Journal Editor

Steam, pliers or Vise-grips, alcohol and water, alcohol or acetone with fabric softener, and "mystery juice" from piano supply houses all fall under the heading of "alternative" voicing methods. We don't include hammer hardeners here because they seemingly found their way into the mainstream of voicing techniques many years ago. When are these alternative methods appropriate? What kinds of side-effects might be expected? How do they differ in their action from conventional needling? These questions and more are the subject of this edition of the Roundtable.

Our cast of characters (in order of appearance):

David Porritt, RPT: David is staff piano technician at Southern Methodist University in Dallas, Texas.

David Stanwood, RPT: Noted for his work with grand action leverage and touchweight modification systems, David is also an expert on wool felt.

Bill Ballard, RPT: Mr. Bill is a very interesting guy. He lives and works in Putney, Vermont.

Jack Reeves, RPT: Jack is head piano technician at Brigham Young University, and the owner/operator of the "pianotech" Internet listserver.

Danny Dover, RPT: Danny works as staff piano technician at Dartmouth College in Hanover, New Hampshire.

Gordon Large, RPT: Gordon lives in Mt. Vernon, Maine.

John Musselwhite, RPT: A third generation piano technician, John lives and works in Calgary, Alberta.

Barbara Richmond, RPT: Barb is a former staff piano technician at Illinois Wesleyan University, now friend to cockroaches and scorpions in northern Texas.

Wally Brooks, RPT: Co-owner, with wife Vivian, of a successful piano supply business, Wally will be Institute Director for the 1997 annual convention in Orlando.

William Sadler, RPT: William is staff keyboard technician at the University of Minnesota.

Susan Willanger, RPT: Susan maintains a busy private practice in addition to her work as piano technician on the staff at the University of Washington, in Seattle.

Larry Fisher, RPT: A PianoDisc installer, Larry lives and works in the Portland, Oregon area.

Ron Torrella, RPT: Ron is a staff piano technician at the University of Michigan in Ann Arbor.

David Porritt: My goal in voicing is always a hard core and a soft surface. That way a hard blow punches through the soft felt and gives a bright forte. A light blow gives a darker color. Certainly many would disagree with me.

David Stanwood: I couldn't agree with you more. Those who would disagree with you are missing the point of voicing, which is to give the pianist different tone color at different volume levels, a "tonal palette."

I've often referred to the distance into the hammer where the felt goes from soft to hard as the "Gradient Zone."

While we are on the subject I've generally found that lighter hammers need a deeper gradient zone and heavier hammers require a shallower zone. Therefore, lighter, cold-pressed hammers work well. Hot-pressed hammers are better suited to heavier hammers.

If any of you run across light hot-pressed hammers which sound horrible in the pianissimo range try a light shot of steam. I use a Presto electric teapot, #02700. Remove the metal flap covering the spout. Get a good head of steam up, and with the action pulled out onto your lap, flip the hammer back into the spout. In and out quickly should be tried first. The steam puts very little moisture into the felt so it drys very quickly. The effect can be astonishing and it's more permanent than needle voicing. A warning: always have respect for the power of steam.

Bill Ballard: I agree with David about steam voicing. It's what I had been looking for through all those years of glovers needles and "voice grips." If the hammer is made of good quality felt, no matter the name on the box, steam works — and in my opinion, like nothing else. I picked out my West Bend #6400 at (shudder) Wal-Mart, and was also tempted by a clothes steamer for freshening up suits in a hotel room. It had a small reservoir in a 1.5" x 8" handle with four vent holes in a head mounted perpendicular to the handle.

Stanwood: Many have tried the electric teapot which allows you to slide the action out onto your lap and flip the hammer back into the steam flowing out of the spout. We have no reports of anyone actually using a clothes steamer.

Steve Brady: Actually, my colleague (Susan Willanger) and I both experimented with "travel" clothes steamers. We had mixed results, but eventually concluded that the clothes steamer didn't produce a lasting effect. My feeling is that the "steam" produced by the clothes steamer consists more of hot water droplets (mist) than steam. True steam is invisible, and is much hotter than this mist. The true steam from a tea kettle gave me a second-degree burn in a mental lapse of about one second. As David says, always have respect for the power of steam!

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Jack Reeves: I called all the local Wal-Mart-type stores and couldn't find a Presto #02700, so I called Presto and they said it has been replaced by #02703, which I found at a large grocery and appliance chain store for $17.73.

Stanwood: I like the Presto® tea kettle because the space inside the spout is just the right size for a hammer to tip back into, thereby assuring a complete dose to that part of the hammer that you tip into the spout area. Perhaps we should have a "steamers show and tell" at regional or annual conventions. (*EDITOR'S NOTE: David reports that he now prefers Rival's® steamer with thrmostatic control. — S.B.*)

Danny Dover: A thousand thanks for your tip on steaming hard hammers to bring down the brightness. It works beautifully, and so fast! Just a split second for each hammer in the spout, with a good head of steam (See Figure 1).

I've been going around to all the practice room grands here at Dartmouth and it makes a huge difference.

My confession: The very first hammer I tried steaming (a Steinway 'L' in a practice room), I flipped the hammer into the spout and it got caught! In a panic I of course made things worse by sloshing boiling water onto the hammer (the kettle was too full — you only need a little water.) Boy was I glad no one was around. Anyway, that one hammer is kind of a funny shape right now (I'll leave it to your imagination — don't try it) and eventually I'll have to replace it, but you know it really doesn't sound all that bad!

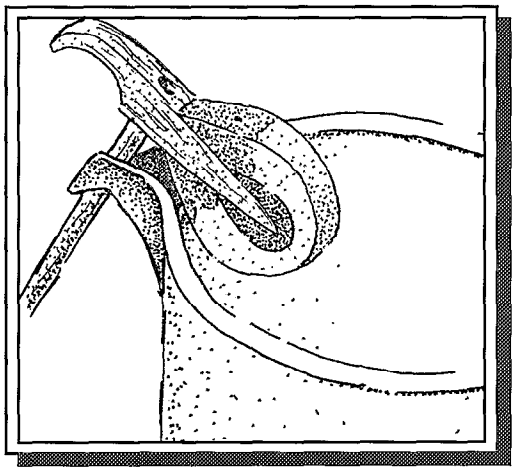

Figure 1 — Hammer head in spout of a Regal #7427 Hot Pot, cover removed for illustrative purposes.

Anyway, that was my training cost, and it was well worth it. Thanks again, Dave.

Gordon Large: It's a fairly straightforward operation. Using an electric kettle (I've always thought they were called hot pots ... used to have a small one for tea and coffee back in college), you get the water boiling rapidly, then with the action out and resting on your lap, you insert the hammer head into the spout (which should be about the size of a hammer head), and remove the hammer immediately. The hammer never stops. It is literally in and out. You'll be surprised at how much change you get for so little time.

David Stanwood describes the wool fibers as armor plated rubber bands. Heat and moisture causes the armor plates to flair out. This is what happens if you dry a wool sweater in a dryer. In David's class in White River Junction., Vt., he had some electron microscope photos that showed differences between differently prepared hammers. *(EDITOR'S NOTE: See Stanwood article on Page 30. — S.B.)* You could clearly see the change in felt density as you moved deeper into the hammer. And the picture of the hot pressed hammer looked like a solid mass of felt. This type of hammer would have a tremendous response to the steaming procedure.

John Musselwhite: Before I try this (perhaps tomorrow morning on a Kawai action I'm about to pick up), can an over-steamed hammer be restored by ironing? This Kawai (GS-30) has been overly bright since new and I've never been able to get the mellow sound out of it that the owners would like. On the other hand, I don't want to ruin it!

Stanwood: Yes, an over-steamed hammer can be restored by ironing. But the limiting factor is the pressure that you can apply with your typical ironing tool. The kind of pressure that made the hammer in the first place is higher than what you will achieve from a hand ironing tool. Heat (dry or wet) and static pressure reduce the volume of the felt, increasing density and reducing resiliency. Steam reverses things by increasing the volume, decreasing density, and increasing resiliency. The cycle may be repeated endlessly.

A comment: Sustained heat above 200 F will degrade the integrity of the wool fiber's complex molecular structure and lead to a decrease of the felt's liveliness. You also must take into account that steaming causes the hammer to become slightly narrower at the top layers. This is a big reason to avoid heavy doses of steam.

The pressing and densifying effect of dry heat and pressure may be reversed by mechanical working of the fibers. Try this at home: Take a block of damper felt and press it flat with a hot iron. Grasp either end of the felt and work the ends back and forth so as to work the felt in the middle. You will see that the felt puffs up in the middle where it is being worked, demonstrating this important property of the wool fibers in felt.

The playing-in of a hammer mellows the tone to some extent as a result of the repetitive striking of the hammers against the strings and the resulting working of the felt fiber in the hammer head. Vigorous rubbing of the felt surface with a sharp, smoothed steel edge such as found on a burnishing tool, can achieve significant effect in building surface resiliency. Franz Mohr has been known to drag his fingernail across the top of the hammer head so as to affect the surface fibers to mellow the pianissimo tone. When needling shoulders with a single needle, Yamaha recommends letting the shoulder of the tool slam into the felt because for some reason it gives a better effect. The reason is that working and moving of the felt by the impact of the tool builds resiliency.

A trick of the trade is to pull back a zippy upright damper block and reach in with the pinky finger and massage the surface of the felt. The result can sometimes have the startling effect of eliminating much of the zing sound.

Barbara Richmond: Does steaming the strike point of hammers help shoulders that are too hard? I have found that a softer shoulder (not rock hard) improves sustain.

Wally Brooks: The shoulders of the hammer definitely need to be both strong and resilient — not as hard as the area right above the molding or as the lower shoulders, but not as soft as the 1/16" at the top of the crown. To make the shoulders of a hot-pressed hammer resilient

(and I'm speaking here of the areas between 9:00 and 10:30 and between 1:30 and 3:00), you can use needles. But in the tenor and bass, to save the hammer from excessive needling, I like to use Vise-grips. I adjust them to an opening of 6mm (or 1/4") and apply them on the sides of the hammer until the Vise-grips lock. This provides consistency in the amount of pressure applied to each hammer.

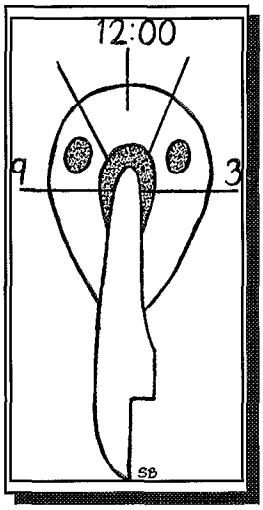

Figure 2 — Hammer profile showing spots for application of Vise-grips or pliers.

Brady: I've found this method to work quite well, as Wally says, in the tenor and bass ranges on hot-pressed hammers with shoulders that are too hard. Other things being equal, it increases the effective dynamic range of the hammers and increases the sustain. Several years ago, Bill Smith of the Seattle chapter made me a pair of "voicing pliers" by grinding out the middle area of the jaws and grinding the jaws themselves to a smooth, convex profile (See Figure 3). With the middle area taken out, there's enough clearance so the pliers can reach across the hammer to the far shoulder right after doing the near shoulder, without changing the angle of the pliers in the hand. With the teeth ground off and a convex profile ground in, the pressure can be applied to a very precise spot, and no ugly marks remain on the sides of the hammer. It seems to me that this kind of modification of the jaws, if applied to a pair of Vise-grips, would result in a wonderful voicing tool. Voicing by this method is simply an example of the "mechanical working" of hammer felt mentioned earlier by David Stanwood.

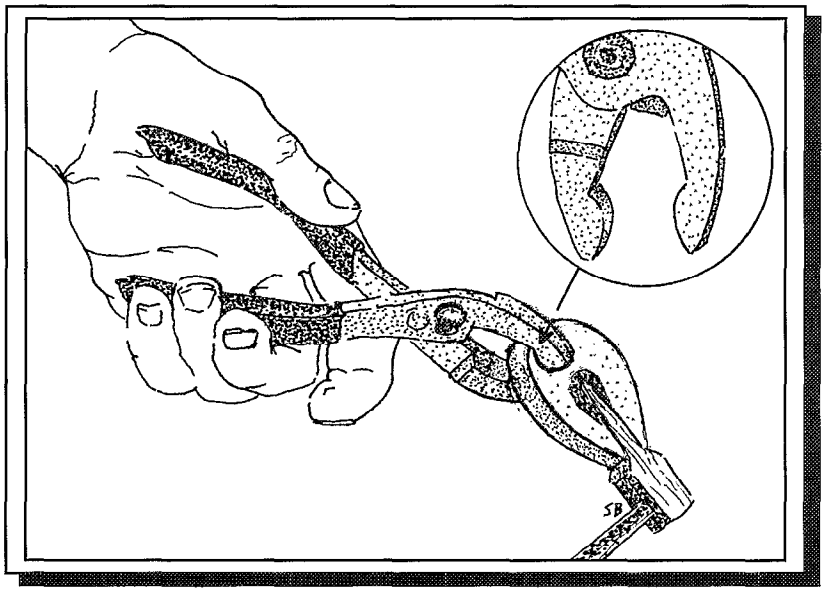

Figure 3 — Voicing pliers ground by Bill Smith.

William Sadler: Earlier in my practice (1978) I tried some Downy® fabric softener on a fairly new Steinway B that had already been needled to death. The professor was kind of a nut and thought the tone was too bright. Anyway, the fabric softener was a disaster. The hammers puffed up, all right, but I recall there was a waxy residue left behind. The tone became really funky. Somewhat like muffled thumbtacks if you could imagine. I panicked. I got out of that one by turning the stack upside down and hosing the hammers with acetone. When I was done the piano was left with virtually no inner voicing capability. Dead as a doornail. This professor loved it. Of all the many technicians he had I was the only one who gave him what he wanted. I started to receive calls from his students and friends, who wanted me to do the same thing to their pianos. There was no way I was going to repeat that experience of panic!

Susan Willanger: I have followed up on pianos where fabric softener has been used (not sure what mixture or quantity). What a mess! The hammers seem to attract a lot of dirt and reshaping is impossible. After one pass, the sandpaper clogs up and can't be used.

Larry Fisher: I write in support of fabric softeners. Diluted with alcohol eight parts alcohol to one part softener, works so nice on hammers that sometimes are not responsive to anything else.

David, I'll be happy to try the steam, it sounds like a real exciting way to treat the hard packed felt of the hammer. I don't like adding anything to "clean" felt. The idea has always bothered me, however, over the years I've heard about a whole bunch of stuff added to hammers to make them respond. I've been using diluted fabric softener for about a year now. The results last longer than needling alone. The solution is applied directly on the striking surface with a hypo-bottle in a very thin line. I follow that with the usual needling to open up the hammer on either side of the striking surface. This makes those "Asian" hammers sound more American, and also keeps people from complaining that they can't get their PianoDisc unit to play soft enough. (*EDITOR'S NOTE: Since this discussion took place last year, Larry has changed from fabric softener to 50/50 alcohol/water. — S.B.*)

Ron Torrella: When using fabric softeners or detergents of any sort as hammer softeners, one must be certain that salt (sodium chloride) is not among its ingredients. Many — if not most — detergents have salt.

I've found that a mix of dodecyl sulfate (which can be found in most college/university chemistry stores and, I'm told, in some drug stores) and acetone works marvelously to soften just about any hardener. The one hardener that it fails to work on is time — that is to say, hammers that have gotten hard and crusty over many years.

Stanwood: I would stay away from fabric softener; it has stuff that leaves residue and clogs up the felt. To tell if it is a candidate for steaming, try a sample by applying minimal steam, that is, in and out of the spout very quickly. Let it sit for a few minutes and check the result. As-

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sess for tonal effects and changes in the shape of the felt. Analyze and proceed.

Richmond: What exactly is clogging up the felt? Do you feel it affects the tone? The string? I'm only asking because I've had such wonderful success using softeners — five years at IWU — and have seen no adverse effects. The only results have been making previously unvoiceable (honky-tonk) hammers produce nice piano tone.

Stanwood: Residue fills the spaces in between the fibers that give them room to move and flex.

Torrella: You mean to tell me that in spite of those hammers traveling at upwards of 70 mph (I could be off a little but they are moving pretty fast) and crashing into one to three strings, the few drops of fabric softener that are put into the hammers are going to be so tenacious as to clog up the hammer felt like so much Mississippi muck?

Stanwood: In this case, I'm commenting on the comments of others. I've never used fabric softener. I do know that anything added to felt will degrade its ability to work, and felt has a great capacity to work in spite of all the tortures we put it through. Perhaps the problems that someone had with fabric softener were in a situation that was already pushing the felt to the limits, and the fabric softener was the straw that broke the camel's back. Or perhaps the fabric softener wasn't diluted enough. It's hard to say. I'd stay away from additives such as river muck. Who knows what's in that stuff!

Torrella: I'm almost certain that the ingredient that is most crucial is either sodium lauryl sulfate or dodecyl sulfate. Since the sodium part tends to send some folks into catatonic shivers, I stick with dodecyl sulfate. It doesn't seem to leave much of a residue behind. The only drawback is filing hammers that have this stuff in it. Makes you a little uncomfortable — irritates the nose lining a bit. A dust mask (that you should be wearing anyhow on account of all of those fibers floating around) goes a long way to relieve nasal distress!

Richmond: Aren't there other chemicals in the felt?

Stanwood: No, that's the beauty of felt: it's just pure wool. I'm convinced that the active ingredient in fabric softeners is the water. I believe strongly that it is the water in fabric softener that releases the heat/pressure densified felt and produces the voicing effect. It's the H_2O! The softening agent component does not rejuvenate fiber elasticity. In the textile trade they say that once a fiber becomes brittle and dead it cannot be restored to its former quality even by adding lanolin. Experiment with the steam and use what ever works best for you.

Torrella: I think you're right about the water being the active ingredient. Seems like the fabric softener is just the vehicle for getting the water in amongst the fibers. I'm thinking specifically along the lines of the claims of your average woolen cleaners, that do not claim to "soften" the articles you are washing. Their loudest claim is to "delicately clean without fading or stretching or shrinking." That sounds to me like a formula whose solitary purpose is to incorporate ingredients that will allow the real cleaner — water — to get in and out without a lot of agitation. Since we can't agitate hammers (as if it would help anyhow!), we need an efficient means of communicating water in hard-pressed wool — soapy solutions do that well.

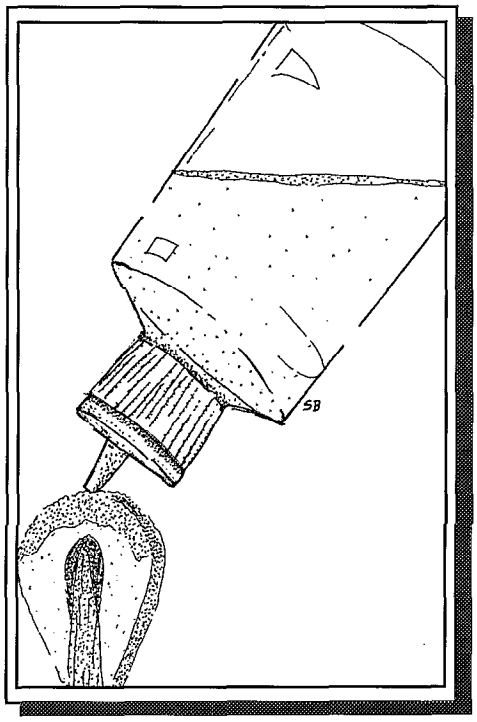


Figure 4 — Applying alcohol-and-water solution to hammer.

Stanwood: Steam does it best and without adding anything that stays in the felt. A small amount of water added to a large amount of alcohol works too. Heat up the solution and soak the hammers with it. Allow to dry overnight.

Brady: I've had good luck with alcohol and water on hot-pressed hammers. A ready-made solution which works well here is "rubbing alcohol," also called isopropyl alcohol. This is usually about 70 percent isopropyl alcohol and 30 percent water. You can apply it with a plastic squeeze bottle directly to the crown of the hammer (See Figure 4). You'll notice a difference within a short time, but you really need to wait several hours to assess the results. I've used it in school practice rooms with some success. As with most voicing methods, this must be used with caution and discretion. Like needling and steaming, it is not a substitute for properly shaping the hammers, because unless the hammer shape is right, no amount of voicing will produce a truly satisfying tone quality.

Ballard: I agree. Water won't soak into hard-pressed wool because of water's surface tension. Dilute it with alcohol, and the alcohol will open the door. I used the alcohol/water soak for a couple of years, but always begrudged its slowness ... similar to lacquer/lacquer thinner vs. plastic/acetone. Turn the water from liquid to vapor, and you've eliminated its surface tension.

Musselwhite: A customer of mine has a Steinway M which had new (factory) hammers in the seventies but they were never lacquered. The customer complains the tone is too bright but the fibres just shred when they are filed and needles drop in by gravity. I would juice the hammers first and then file and needle but the customer is worried the piano will be too loud and bright after that and won't sanction the work. Would steaming help?

Richmond: I had a similar situation — what seemed to be soft hammers and brighter tone than the customer wanted. Needling was ineffective, so I tried using hammer softener. It worked beautifully. Would there be any harm in trying steam?

Stanwood: Steam works well on felt that

has been hardened and densified by heat and pressure. In this situation, the steam may have little or no effect. Just try it and see if it works.

Ballard: I beg to differ, David. The hammers on a Steinway D I service were solid lacquer balls, and they softened up nicely (if slowly). I don't know what principle is at work, but steam seems able to break loose fibers which have been glued in place by too much reinforcer.

Stanwood: Obviously in your situation the steam works. If it works, do it.

Musselwhite: I also look after a Yamaha G-2 (in the Banff Springs Hotel) that I've tried almost everything to bring down (except fabric softener which I'm extremely hesitant to try). Would this instrument be a candidate for the steam treatment?

Stanwood: On an older Yamaha C-7, I got great results by over-steaming, then heavy filing and reshaping, then lacquering up. This allowed the customer to get a few more years out of otherwise unsalvageable hammers. Steam, needles, Vise-grips, irons, etc., etc. all exist to help us achieve a density gradient in the felt that produces the best tone.

Musselwhite: And a rather elusive thing this "best tone" seems to be too. Everyone seems to have a different idea of what that is!

■■■

I hope some of these ideas may prove useful in your work. One thing that many of these methods have in common is that they are less destructive to hammer felt than using voicing needles. My first instructor in the art of voicing told me, "Every time you needle a hammer, you are — to some extent — destroying it." And it's true; voicing needles have the unwanted side-effect of severing wool fibers, which, if done enough, will ultimately be the hammer's undoing. I'm not suggesting that we should never use needles — they're a very important part of our total approach to voicing. But it's good to have other methods available when needed.

Please remember to proceed with caution, and to respect the power of steam. As always, neither the writers nor the publishers of the Piano Technicians Journal are liable for injuries to persons or pianos resulting from the use of these methods. But, used with proper care, they should be no more dangerous to technicians — or pianos — than using voicing needles. — S.B.

Hammer Felt Close-Ups

By David C. Stanwood. RPT
Boston Chapter

Two samples of hammer felt were prepared from two different hammer types. One taken from a cold-pressed hammer made by Ronsen (Series 1, left), the other from a hot-pressed hammer made by Knight (Series 2, right). The samples were prepared by slicing the hammer felt down through the strike line of the hammer with a razor blade. A small cube was then cut out of the side of the cut face of each sample to include the outer surface of the hammer (See Figure 1). The sample cubes of felt were then placed in a vacuum chamber and gold/palladium was sputtered into the evacuated chamber thereby creating a thin metallic coating on the surface of the samples. Each sample was then placed in the chamber of the scanning electronic microscope for viewing and photographing.

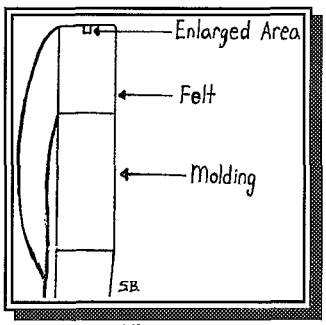


Figure 1

Each series of photos starts with the lowest magnification and brackets into successively higher magnifications. A scale mark in microns is included on the side of each photo. A micron is 1/1000 of a millimeter. The lowest magnification shows a depth of about two millimeters into the hammer felt.

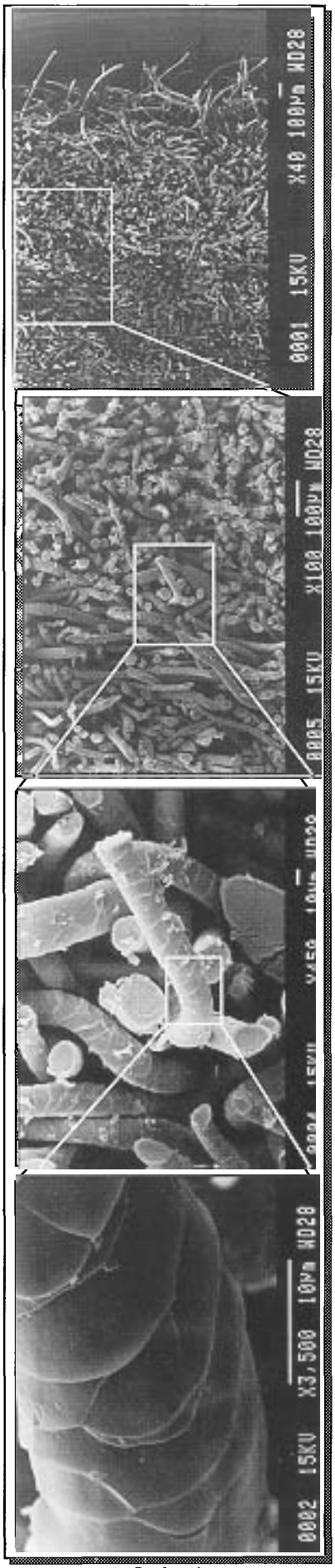
In the x450 magnification photos it is easy to estimate fiber diameter using the micron scale. A fiber 18 microns in diameter would be really fine, while a fiber of 24 microns would be coarse. Note the variation in fiber size.

The x3,500 magnification photo shows the beautifully pristine edge of a wool fiber scale. These scales form a flexible armor coating that makes wool the most durable of all fibers. Inside are bundles of long elastic cells that give the fibers resiliency.

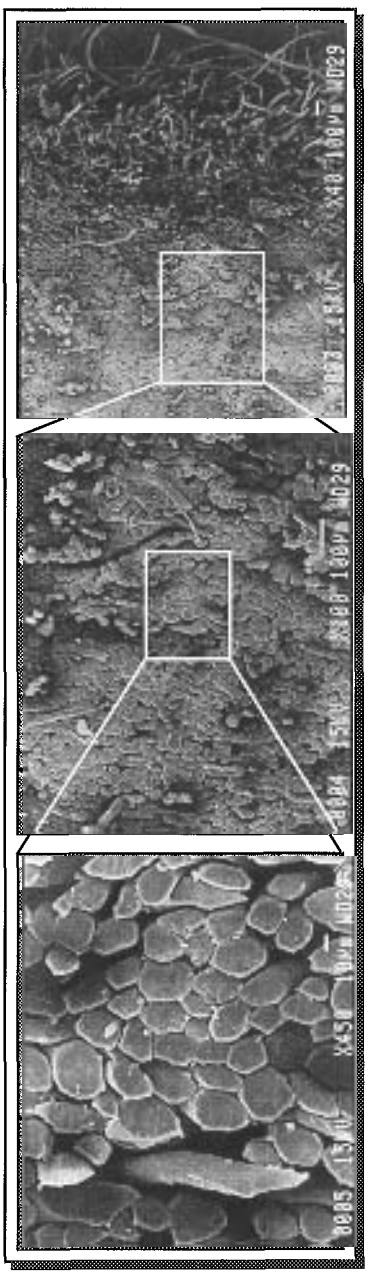
The voicing of a piano hammer is a function of resiliency vs. density. You need some of each in all cases.

When air space between the fibers is high, resiliency is high and density is low. These air spaces allow room for the fibers to move back and forth from a state of compression to a state of relaxation. A high proportion of air space is seen in the cold-pressed hammer photos.

Conversely, when air space between the fibers is low, resiliency is low and



Series 1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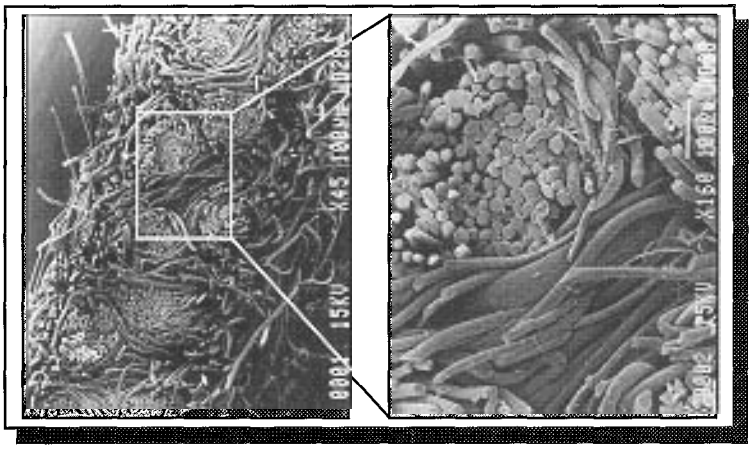


Series 3

density is high. Lack of air spaces inhibits the movement of the wool fibers. A low proportion of air space is seen in the hot pressed hammer photos.

It is helpful to think of the state of the hammer felt in terms of a density gradient zone. This is the depth over which felt density goes from minimum density at the surface to maximum density in the deeper layers. These samples show the extremes. In the cold-pressed hammer we see a deep gradient zone. In the top two millimeters maximum density is not reached, whereas in the hot-pressed hammer the gradient zone is very shallow with maximum density found at a depth of about one millimeter.

As a rule of thumb, when hammers are light, deep gradients (softer) tend to work well, and when hammers are heavy, shallow gradients (harder) work well.

A soft/heavy hammer will cause damping of the upper partials and create duller tone because the contact time of the hammer against the string is too long. Proper hardening of a heavier hammer compensates for the damping effect of the extra weight by forcing the hammer to rebound more quickly.

In 1911 Alfred Dolge said it all: *"The art in hammer making has ever been to obtain a solid, firm foundation, graduating in softness and elasticity toward the top surface, which latter has to be silky and elastic in order to produce a mild, soft tone for pianissimo playing, but with sufficient resistance back of it to permit the hard blow of fortissimo playing."*

The two photos in Series 3 (above) show a cross-section of a piece of bushing cloth. Note the bundles of fiber that are the individual yarns or threads of the fabric, and the wide variation in fiber diameter. PJ

Tuning Stability Etudes

By Chris Trivelas, RPT
Contributing Editor

The difficulties of piano tuning fall into two main categories. One is getting the strings to sound the pitch that we want. To aid us in this endeavor we have our sense of pitch and sound beats, not only among fundamental frequencies but among coincident partials. We also have patterns of beats as we ascend and descend scales. Some of us even use electronic measuring devices. These are our feedback loops. They tell us quickly and accurately if the pitch of a string is where we want it. The quality of the feedback loops has a great deal to do with how quickly a skill can be mastered.

The second type of difficulty in piano tuning is setting the strings so they will stay there. This is generally considered the more difficult aspect, and the tuning skill which takes longest to learn. Our feedback loops for tuning stability are the test blow, which is important but crude (more on this presently), and our analysis, the next time we hear the piano, of how it has gone out of tune. If this "next time" is six months to a year later (as is typical), it is all but useless as an aid in developing this important skill. The problem with developing tuning stability (that part under the tuner's control) is getting timely and meaningful feedback. If all our tunings were of the type that we didn't hear them again for six months to a year, the feedback loop would be much too slow to develop this important skill rapidly.

Sometimes the circumstances of our work conspire to improve this feedback loop. My "tuning stability laboratory" was a nightclub where I tuned a concert grand for a performer whose gigs lasted three to four months, five nights a week, and who played ***hard.*** As I learned and adjusted my tuning stability technique, I found out fairly quickly what worked and what didn't. One thing I found out was that the test blow by itself is not adequate either for knowing whether the tuning is sufficiently stable or for developing the skill of stable tuning. More specifically, I discovered that strings could be set so they would survive a test blow but still not be as stable as possible, or even as stable as the situation demanded.

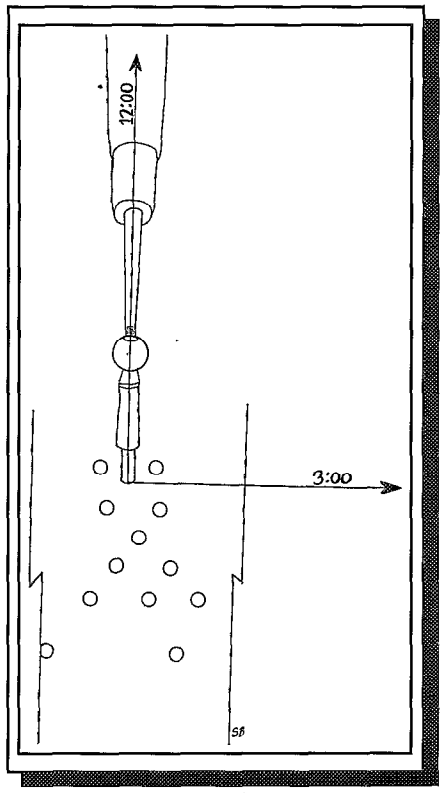
The real test of tuning stability is how a tuning holds up over time and use (hopefully excluding the effects of humidity and temperature). I believe it is possible for the tuner to develop a "feel" for what the string/tuning pin system is doing, and that this "feel" is necessary for really stable tuning. On the other hand, I have found that explaining to a novice tuner what I do in terms of pin flex, torque and differing string tensions over friction points may elicit much head-nodding, but only very slow progress in the actual acquisition of the skill.

I believe that it is possible for the tuner to develop a "feel" for what the string/tuning pin system is doing, and that this "feel" is necessary for really stable tuning. But learning this high-level skill requires much more specific feedback than the test blow provides, and it requires that the feedback occur much sooner than six months down the road.

If we take the word "etude" to mean a study for the development of a given point of technique, we can speak of the following exercises as etudes. I do not claim to have invented (composed) them, but I group them together here as suggested ways of improving the quality and speed of our feedback loops for tuning stability. For our purposes here, when a string goes sharp on a test blow, I will say it or the pin (meaning the string/tuning pin system) was set too high, and when the string goes flat on a test blow, I will say that the string (or tuning pin) was set too low.

Etude #1: The Small Movements Etude

It is a law of piano tuning that the farther you move a string, the less stable it is. Therefore, the ability to make small movements of the string is important not only for stability, but for accuracy, too.



How many clicks from 12:00 to 3

Drive a tuning pin into a piece of pinblock material, and clamp the wood to the workbench. Place your tuning hammer on the pin at the twelve o'clock position. Turn the pin to three o'clock position using as many discrete movements (or "clicks" of the pin in the block) as possible. Beginners are often lucky to get 100 clicks; experienced tuners often go well over 200.

This etude reminds me of the motorcycle "slow race," where the winner is the last person to the finish line without touching his/her feet to the ground.

Etude #2: The Pin-Bending Etude

I have been "flexing" or "flagpoling" tuning pins for the last 20 years, and have noticed no ill effects on pinblocks. This will not endear me to the school of thought which says that tuning pins should never be flexed, only turned. But we can begin from the place we would all agree on—tuning pins should never be bent. It is not enough just to say so, our hands and muscles need to experience the limit of force to be used.

Place a tuning pin in a vise up to the top of its threads. Place a tuning hammer on the pin. Give the tuning hammer little pushes downward, gradually increasing in force until the pin bends. This is the amount of force that should never be used in a piano. In fact we should stay well back from that level of force.

Etude #3: Turn the Pin Without Changing Pitch

Sometimes turning the tuning pin one click in the pinblock results in a bigger change of pitch than we intended, overshooting the desired pitch.

One method of gaining finer control when coming up from below is to flex the tuning pin toward the speaking length while turning it so the two movements cancel each other out and no change of pitch occurs. The pitch can then be brought up by flexing the tuning pin away from the speaking length. If the pitch still doesn't change, or not enough, the process can be repeated (it means the pin/string was set too low). For some reason, this method seems to put less stress on the string as it rounds the tuning pin. Using this method, I have been able to raise pitch (albeit more slowly than usual) without breaking strings even on pianos which have suffered many broken strings before.

Many times I have encountered this paradoxical situation: the pin was set low, and the speaking length was a little sharp, so I lower the pitch and yet leave the pin turned a little clockwise from where it started.

This etude makes me picture a fisherman dropping the tip of the pole while reeling in, then pulling the tip up without reeling.

Etude #4: How is That String Set?

The test blow tells us if the string will hold its pitch under a strong blow. That is a good start, but quality feedback demands more details. Is the string set high or low, and how much? This final group of etudes explores the details of string setting.

Etude #4a:

Set the pitch of a string in your usual way. Then, with a brass drift or screwdriver, tap or pry the string side to side at the capo or V-bar. Did the pitch of the speaking length go sharp or flat, or stay the same? If it changed, by how much? Did it go in the direction and the amount you expected? Try this on several random strings on a fresh tuning. As with much of our work, consistency is the key. Ideally, they should change the same direction and by similar amounts. I like mine to go sharp, but not too much. If any strings went flat, they were set too low regardless of what the test blow indicated. Remember that well-set strings will change different amounts in different parts of the scale and in different pianos. An experienced tuner should be able to feel how the string is set and predict which way it will go in this etude.

Etude #4b: When Doing it Wrong is Good Practice

Some piano teachers have the knack of showing students what they are doing wrong by playing the passage while exaggerating the mistake. In tuning, the next step beyond predicting how the pitch will change when the capo or V-bar friction is broken, is to deliberately set the pin so that the pitch will go sharp or flat on a test blow. Sometimes, the ability to do something incorrectly is a step in the direction of doing it correctly.

Etude #4c: Finding the Extremes

The next refinement of this etude is to intentionally set the pin so that the pitch goes sharp or flat (as you intend) with only a mezzoforte or forte test blow. The tuner who can reliably hit the extremes of pin setting can reliably hit the middle. Moreover, when the tuner can tell how the pin is set by feel and by the behavior of the string, the test blow itself becomes less important, requires less force, and in some parts of the scale (I'm thinking here of the tenor, bass, and sometimes the high treble), even unnecessary.

There may be some purists out there who claim that the ideally set string has equal tension among its segments. My hat is off to anyone who can consistently set strings so that the pitch of the speaking length does not change when the friction is broken at the capo or V bar (as in Etude #4a). Whenever I do it, I claim it was on purpose.

What about breaking the friction at the agraffes? Tapping the string side to side often works, but not always. An alternate method is possible, and sometimes useful on non-agraffe strings. This is to push on the speaking length of the string, in effect stretching it. If the pitch drops more than a few beats, the string was set too low. If the pitch doesn't change with a good push, the string was probably set too high. In the high treble of some pianos, my smallest movements of the tuning pin will still be too large. Going a bit sharp, then pushing the string down sometimes does the trick. When it works, this drops the string to the desired pitch and sets it at the same time. Of course, one should only push on strings using a material significantly softer than the wire. Brass is good on treble strings, and a hammer shank on wound strings.

It is an exaggeration to say that analyzing our previous tunings after six months is useless in developing stable tuning technique. In the absence of prompt feedback, late feedback is much better than none. But what should we look for? Stability problems show up mostly in the way unisons go out of tune. Often patterns will emerge. Did strings in a certain section go out of tune more than in other sections? This may indicate the need to practice setting strings differently in different sections. Did the strings that went farthest out of tune go sharp or flat? Perhaps the strings were set consistently too high or too low. Did the left strings of the unisons go out of tune more than the right strings? The tuning pin closest to the speaking length is often "touchier" and must be set differently. Try etude #4 both on some strings that held and some that didn't. Having obtained this feedback, whatever our skill level is, we can move toward setting strings more like those which stayed in tune the best.

My intent here has been to focus more on the outcomes of these etudes (producing the desired feedback) than on methods. At least for the sake of trying a different approach, I'm assuming that if the student (or anyone seeking to improve their skill level) can produce the outcomes described (without bending any tuning pins), they must have discovered acceptable methods. The point here is less to explore the underlying physics and more to develop the actual skill.

When possible it is best to go just barely past the desired pitch (either sharp or flat), then back, when setting the string. But the problem with general tips like this is they won't work on all pianos or all parts of one piano. Feedback is the key. The test blow is only approximate. Frequent tuning (and analysis) of heavily played pianos is excellent feedback. If that is not available, moving strings regularly to see which way the pitch of the speaking length goes is much more accurate than the test blow and will help develop a "feel" for how the string is set. If that feel is finely developed, who needs a test blow, anyway? PTJ

Grand Piano Plate & Action Relationships

By Alan K. Vincent, RPT
Chicago Chapter

The purpose of this article is to investigate the relationship between the grand piano plate and action. The "action assembly" (or "geometry" or "action setup"), or the relationship between the key, wippen and shank, is directly determined by the position of the plate. If the plate is moved, the action assembly will need to be changed also. If the plate has been mislocated to begin with, the action performance (i.e., the touchweight) could be negatively affected and the tone of the piano could suffer.

Terminology

These are my working definitions for some terms which are used in the article text:

Action Line: distance from the front of the key to the capstan screw line;

Hammer Line Distance: distance from the shank flange center to the center line of the hammer molding;

Tooling Hole: hole installed by the manufacturer or technician to locate one piano component to another;

Touchweight: the amount of resistance encountered when playing a piano action, composed of weight resistance, friction and inertia;

Action Depth: the distance from the front of the keyframe front rail to the center line of the #88 hammer molding with the hammer in the let off position (shank parallel to the string and keybed and the molding center line at right angles to both*)

(While it is considered the optimal position of the shank to be parallel to, and the hammer to be at right angles to, the plane of the strings and keybed when in the strike position, it is common and acceptable to build in a small amount of hammer "under-centering" when building a new piano or rebuilding an action. This "under-centering" will be relieved over time as the hammers are shaped due to wear. — AKV);*

Hammer Under-Centering: condition in which the hammer bore distance exceeds the difference between the action elevation and string height causing the shank to be below the position of being parallel to the string when the hammer makes contact;

Hammer Over-Centering: opposite condition of the above where bore distance is less than the difference between the action elevation and string height causing the shank to pass parallel before contacting the strings. This condition is usually not acceptable except in the extreme treble where it may be necessary, as a voicing procedure, to "bend" the hammer forward (using heat) to finely adjust the strike point;

Action Elevation: in a basic sense, the height of the shank flange centers at notes #1 and #88 from the keybed. The elevation determines the relationship between the wippen and the capstan screw, the contact point between the two ideally being on the line from the wippen center to the key pivot when the key is at half travel;

Leverage Ratio: the numerical relationship of the one lever length to another within a leverage mechanism and derived by dividing the output lever length by the input lever length.

Plate Position

The plate can be moved in three planes: bass-to-treble, fore-and-aft, and up-and-down. The bass-to-treble positioning of the plate in regard to the action is routinely dealt with by technicians in the aligning of the hammers to the strings in the agraffe sections. This is accomplished by changing the amount of shim material behind the keyframe stopblock in order to shift the action to the treble or allow it to move further to the bass in the "at rest" position.

The Bass-To-Treble Plane

During rebuilding, the plate cannot be moved in the bass-to-treble plane without the bridge being moved also. Moving the bridge would require soundboard replacement as well. The plate might possibly be moved without changing the bridge location provided the original side bearing was incorrect and this could be improved with a bass-to-treble shift in the plate position.

Also, it is possible to pivot the plate, changing the sidebearing at the tenor end of the treble bridge while maintaining the original location of the plate relative to the treble end of the treble bridge. This is usually done by using the highest plate-mounting bolt in the treble curve of the plate as a pivot or a tooling hole installed by the manufacturer or technician.

The Fore-And-Aft Plane

The fore-and-aft positioning of the plate is important because it determines both the location of the action line and hammer line distance. Both of these dimensions are important in regard to the action touchweight and changing either can affect the action performance.

A very basic consideration of the fore-and-aft positioning of the plate is the point at which the #88 hammer (and other treble hammers) hits the string. If the plate is moved too far forward, the hammer will not contact the string at the best possible point within the range available from the strike point adjustment in

the treble keyblock. If the plate is too far back, the hammer will likely hit the plate V-bar and the upper range of the piano will be rendered useless unless a repair is effected (such as removing the hammers from the original shanks, installing new shanks and "hanging" the hammers on the new shanks at the increased hammer line distance).

While it is fairly common for technicians to change the hammer line distance during hammer replacement, changing the action line is less common. If this is attempted, it should be for a good reason and with a specific intent in mind.

If a change in the action line is attempted, remember that the further back the action line, the more weight will be felt by the pianist but the power available will also be increased. If the action line is moved forward, the effective weight of the action parts on the capstan screw will be less but so will the amount of power available.

Another important consideration in moving the action line is the amount of lift available at the capstan. Again, if the capstan moves back, the amount of lift (and therefore the amount of aftertouch available) will increase. Moving everything forward will decrease the lift and the amount of aftertouch available.

In regard to moving the action line, this should be approached with the idea in mind of moving the complete top action (or "stack") on the keyset and not just moving the capstan screws around under the wippens. The wippen "heel" is radiused where it contacts the capstan screw (the top of which is also radiused) and this point of contact should be in the center of the radius.

The hammer should be at the point of the beginning of let off (the shank should be parallel to the string) when the playing end of the key reaches the beginning point of aftertouch (or moves the desired key travel). When the hammer and key are in this position, the jack tender should be in contact with the let off button and the repetition lever in contact with the drop screw.

Use the following simple formula to determine if a considered action line will provide sufficient lift of the hammer to the string:

Key travel x key ratio = lift at the capstan screw

Key travel (KT) equals total key dip minus aftertouch. Since the key should be at the beginning of aftertouch when the hammer is beginning escapement (the beginning of aftertouch is actually a regulation adjustment so the shank should be parallel to the string at the end of key travel), then the key must move from the "at rest" position to the point of the beginning of aftertouch and not through the complete "keydip." More simply put, if you had .400" dip and .050" aftertouch, you would have KT of .350".

"Key ratio" is the length of the rear key lever arm divided by the length of the front key lever arm and is normally between .5 to .6.

This is sometimes referred to as a 2:1 ratio given that the front lever arm of the key is basically twice as long as the rear lever arm. In terms of mechanical lift of the hammer to the string, we will call the ratio .5:1. This tells us that the capstan screw is going to move up basically 1/2 the distance the front of the key moves down (the output is 1/2 of the input).

When changing the action line, it is the key ratio and the lift at the capstan that are being adjusted.

So, using the numbers above, .350" x .5 = .175", the amount of vertical lift, in inches, at the capstan screw given a key travel of .350".

Once the lift at the action line is determined, that distance is multiplied by the wippen ratio (usually around 1.5:1, i.e., 3.75"/2.5"* = 1.5:1) to give us the amount of lift at the knuckle:

.175" x 1.5 = .263"

(Note: — the two levers within the wippen, used in regard to vertical lift, are derived from lines from the wippen flange center to the center of the knuckle and to the contact point between the capstan and wippen.)

The shank ratio (usually around 7:1, i.e., 5"/.688" = 7.3:1) is then determined and multiplied by the lift at the knuckle, equaling the amount of lift at the hammer:

.263" x 7 = 1.84" (hammer blow equals 1.875", - .063" for let off = 1.812" of needed lift at the hammer and 1.84" will be available)

Using the numbers above, it can be seen that the proposed action line (or length of the rear key lever arm) will provide a sufficient key leverage ratio and lift at the hammer given a 1.875" hammer blow.

The Up-And-Down Plane

The up-and-down plane is considered at the V-bar and agraffe height to the keybed ("string height") in regard to action set up and the hitch pin panels in relationship to downbearing. The two can be set independently of each other within a narrow range (the bridge height, which is often changed during rebuilding, plays into this).

The string height is very important in determining the relationship between the key and wippen ("action elevation") and the hammer boring distance. If the action elevation is incorrect, excess friction at the capstan/wippen contact point will be created. If the elevation and bore distance are not considered together, over or under centering of the hammer can occur causing a loss of power and accelerated wear.

The primary concern of the action elevation is the relationship between the wippen and capstan screw. The point of contact between these two parts should be on the line between the wippen flange center and the point of the key pivot at the

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Grand Piano Plate & Action Relationships

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bottom of the key. This ensures that the friction created by the sliding motion of these two parts will be minimized.

It is not uncommon to find this point of contact already above this line with the key in the "at rest" position. This is usually caused by the string height being too high or the keyframe too thin and the action stack being built up on excessively thick keyframe shoes in order to work from a fixed hammer bore distance. This condition will increase the friction created by the capstan sliding along the felt of the wippen "heel" and accelerates the wear at this point.

While the friction created at this point may not, by itself, cause a noticeable problem for the pianist, an action set in this manner creates an unsound foundation on which to build the remainder of the action assembly.

Touchweight & Intertia

It must be remembered that there is no "touchweight adjustment screw" on piano actions and that the touchweight is built upon all the frictional components within the action, the physical weight of the parts, the amplification or reduction of those weights due to leverage (which changes the friction also) and the use of counterweights (keyleads). For an action to perform at its best and the tonal performance of the piano to excel, each assembly and frictional point must be correct.

Also, the touchweight is ***not*** created solely by the keyleads. The keyleads ***reflect*** the touchweight conditions within the action assembly. You cannot make a piano action lighter by adding leads. You can only reduce the downweight. Adding key leads to counterbalance excess hammer or action part weight increases the inertia present in the action and is one of the most common causes of "heavy touch" complaints from pianists. If the action is to become lighter, it has to ***lose weight***, not gain it (i.e., add key leads).

While an action with high inertia (hammers which are heavier than needed counter balanced with excess key leads) might have an acceptable downweight and upweight and feel quite comfortable at adagio tempos, it will soon become tiring and heavy when played for extended periods at allegro tempos. This type of complaint often does not surface until after the pianist has had the piano for some time and has spent time in serious practice.

Consider a see-saw with a 50lb. child on one end and a 75lb. child on the other. This leverage situation is "counter balanced" at 25lbs. That is, it requires 25lbs. to balance the lighter end with the heavier. Now consider the same see-saw with a 250lb. man on one end and a 275lb. man on the other. The counter weight is still 25lbs., the down weight and up weight are the same (discounting increased friction resulting from the increased normal force at the pivot). What is different? The inertia present with the heavier weights requires much more effort to start the lever into motion, stop it, change direction, etc.

If one were to stand at the end of each see-saw, grab the end and move it up and down as fast as possible for a long period, it would soon become apparent which one was "heavier"!

If heavy, mass-loaded keys would perform in a piano action, spruce (a very light wood) would not be the material of choice for the manufacturing of keysets in fine grand pianos.

Indicators Of Possible Poor Plate Location

Treble hammers hitting the V bar or strike point outside the range of adjustment available from the key block locator:

- Tenor hammer hitting agraffe shelf
- Action line too long or too short
- Hammer line distance too long or too short
- Plate touching inside of rim
- Evidence of plate grinding on perimeter flange
- Plate mounting bolts broken through inside of inner rim
- Excessively heavy touchweight or number of keyleads (possibly related to action line and hammer line distance)
- Hammer over or under centering
- Incorrect action elevation
- Poor side bearing
- Treble bridge glued to soundboard on top of belly rail
- Bridge touching plate
- Drop screws dragging on bottom of pinblock
- Loose capstan screws (if they have to be turned out too far)
- Action hitting inside of inner rim on shift
- Action cannot be regulated to manufacturer's specs
- Action does not perform well when regulated to specs
- Excessive gaps between plate and outer rim

Summary

It should be evident that the plate and action are closely interrelated and that the plate position can influence the tone of the piano and the amount of power available. The relationship between the plate and action should always be investigated when starting a rebuilding job so that any problem can be corrected and the piano can be at its best when completed.

Alan Vincent is Director of Technical and Support Services at Geneva International Corporation, importers of Petrof pianos. The material in this article will be presented in a three-hour class at this summer's PTG Annual Convention and Technical Institute in Dearborn, Michigan. PTJ

Behold the Upright

The Regulating Rail & Drop Action Peculiarities

By Don Valley, MM, RPT
Western Carolinas Chapter

Prior to moving from the action area into piano backs with stringing and soundboard work, one last portion of the vertical action needs to be addressed. Also, the variations of the drop action from the standard direct-blow vertical action require unique procedures.

The Regulating Rail

When the regulating screws turn freely in the wooden rail, the regulating rail is simple to restore. Just as often, however, these screws are rusted and/or corroded and will not turn in the wood, and you know too well the result. Be thorough as you judge the condition of these screws; check many along the rail before concluding that either all is well or a new rail is needed. Checking these screws, especially those that are reluctant to move freely at first, is best done with a regulating screwdriver tip designed for freedom of movement on the eye (See Photo 1) A & B are good; C creates unwanted pressure. Place the tool as vertical as possible.

This is especially important if the rail is still in the action. Before the typical clockwise turn to determine freedom, give a nudge in the reverse direction and then proceed. I have found, for some unknown reason, the slight twist in both directions will often save broken screws and the necessity of making a new rail.

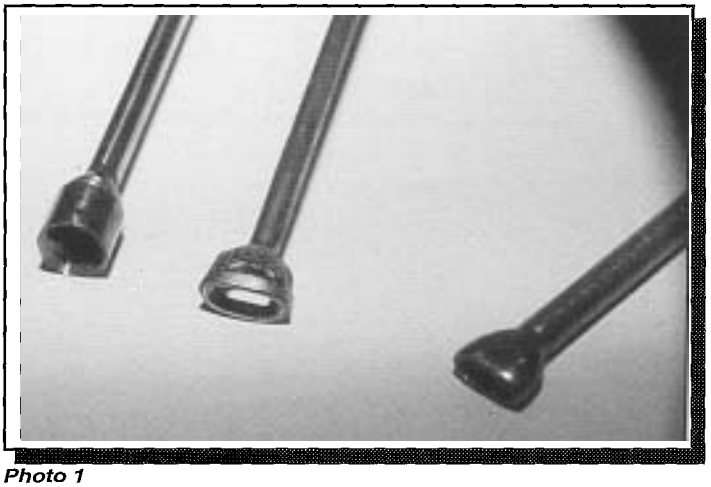

Photo 1

Another tool often effective in freeing up the regulating screw is the "zapper" created by Frances Mehaffey. Take the handpiece with double prongs and touch the eye for a few seconds with both prongs. The heat generated will loosen the corrosion, and the threads will be able to move again. (See Photo 2). Use caution so that the metal does not get too hot and actually burn the wood, defeating your purpose.

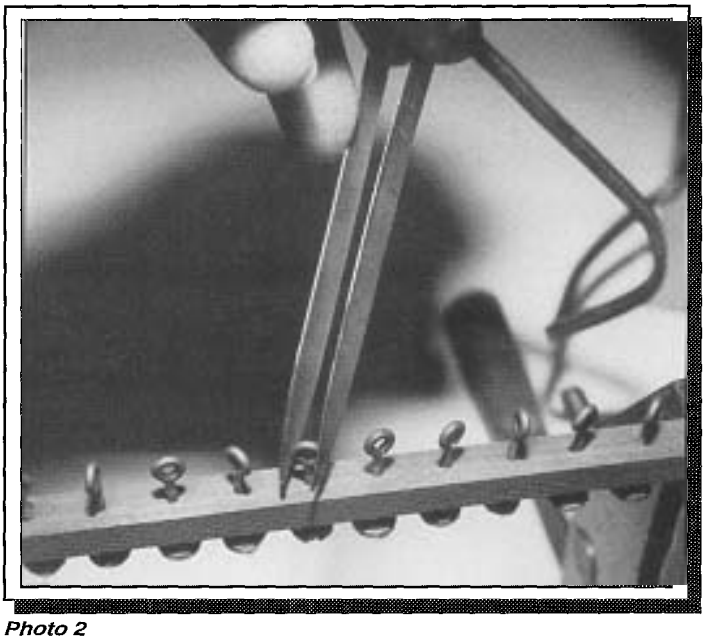

Photo 2

For the occasional broken one, you can repair it in one of two ways. Preferably remove the button, grip that end of the screw with small vise grips and turn it out (See Photo 3). Then replace the broken screw with a new one. Should this end also break, drill a hole directly beside the broken one and install a new screw; there is plenty of surface here to contact the jack. If there are more than a few, make a new rail as the other aged screws will begin to break down soon.

So you want to know about those miracle lubricants, such as those for center pins. I have not found a lubricant yet to penetrate deeply enough to make any improvement with

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Behold the Upright

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"frozen" regulating screws. Remember, any kind of liquid travels in the direction of the grain, not across it. Most lubricants useful in metal processes are not compatible with wood. They serve to complicate the situation rather than solve it. Now that the regulating screws are no longer a problem, let's proceed to do the rail.

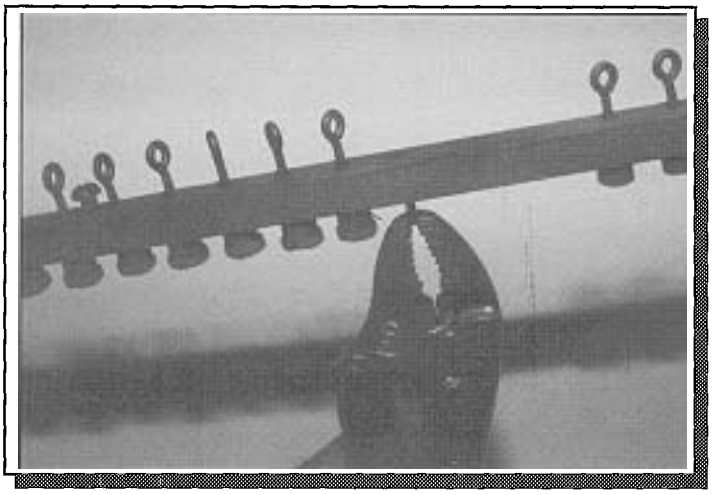


Photo 3

Replacing Let-off Button Punchings

First, after a thorough cleaning in the sandblaster, lay the rail on its side for cutting off the old punchings. This is for keeping undue pressure off the buttons. ***Do not*** use a wetting solution on these such as wallpaper remover or vinegar and water because the acid in these causes rust to form very quickly and, thus, you have the problem back again. I suggest using a sharp 1/2" chisel (See Photo 4). It will usually get it clean the first time. With the punchings gone, clamp the rail upside-down. Either two Jorgensen clamps or your wood vise will work for this. Place a dot of the glue of your choice on each one, pressing a new punching in place. With cold glue, you can glue eight or ten prior to placing the punchings down. Then, go back and press down on the previous ones a couple of times to secure them well. Once dried, your job is done and it can be replaced into the action.

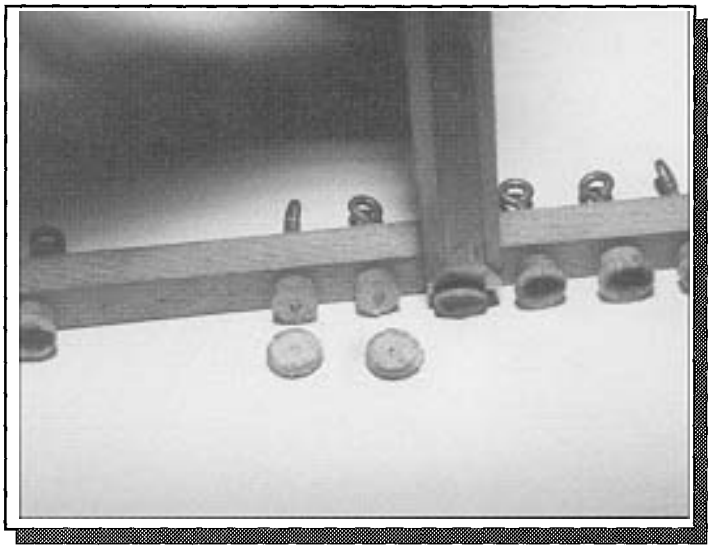


Photo 4

Making a New Regulating Rail

But suppose the old eyes were snapping off the original rail. A new rail is easily made. From a piece of poplar, cut a new rail to the same dimensions as the old rail. Maple is all right, too. Clamp the old and new pieces together. With a fine-pointed pencil, scribe a line across the new piece from the centerline of each of the old regulating screws. (See Photo 5). Do the same for each of the mounting screws but draw a little circle to differentiate these from the other lines. Unclamp. With a straightedge, scribe a line down the center of the new piece. At each intersection, using your drill press, you will drill a hole for the new eyescrew. At the circles, use a different bit size for the mounting screw.

Measure the diameter of the threads of a regulating screw and choose a slightly smaller drill bit. For drilling the proper-size hole for the mounting screws, measure the screw inside the threads and choose that size bit. This is the proper method for selecting bit size when dealing with screws. Because of the fine threads on the regulating screws, measuring inside the threads is not possible.

With the holes all drilled, sand off the pencil marks. With your fingers, start each new regulating screw. Take your regulating screw adjustment tool out of the handle and chuck it in your variable-speed hand drill. Proceed to turn each of these eyescrews through the rail until just the tip is exposed. Remove the adjustment tool from the drill. Place it back in the handle. You will now place a new button on each screw by this method. Hold a button up against the rail over the tip of the screw.

Using the hand tool, turn the eyescrew into the button several turns until it is secure, but not all the way through. The reason for pressuring the button against the rail is so the button will not be angled on the shank of the eyescrew. If it is just held with the fingers and thumb, it will often be crooked on the shank, thus making regulation difficult. Now turn the eye until there is about 3/32" space from the bottom of the rail to the top of each button. You may do this with the drill. Proceed to install new punchings as previously explained. One final tip: set the mounting screws into the rail while it is out of the piano. Then install the rail and regulate the let-off.

The Drop Action

This type of action is found in spinet pianos. It is so named because much of the action is dropped down below the level of the keys. This requires, in most actions, the use of

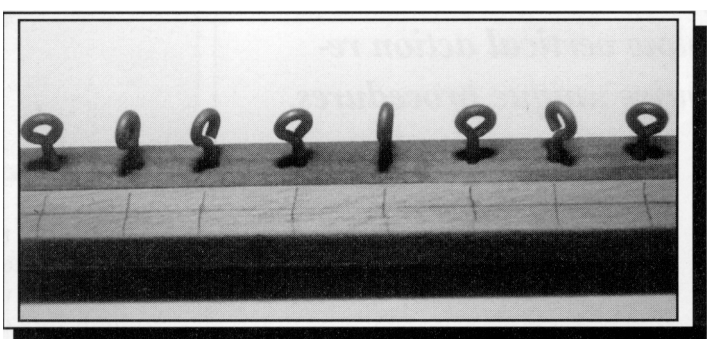


Photo 5

elbows. These elbows are attached to the front of the wippen with a vertical wire or wood piece attached to the back of the key (See Figure 1) or through a guide rail (See Figure 2).

If you have never had a customer call to tell you some of the keys are dead and don't come back up, trust me, you will! This clue starts a red light flashing right away that says it is a spinet piano with broken elbows. These elbows were made of a celluloid type of plastic. The oil content of this composition gives up after about 30 years or so, less if a dehumidifier rod has been mounted on the rail directly below. The tenacity of the material has been lost and the elbow now breaks with a mild-to-firm strike of the key. Once this begins to happen, the wise choice is to replace the whole set with wooden elbows.

It is probably because of this scenario, multiplied thousands of times, that there is such a reaction to plastics used in today's pianos. However, the space-age composites of today are in no way related to that plastic used in the 1940s and 50s. There is no reason whatsoever to be leery of what people call "plastic" in present-day pianos.

Removing The Drop Action

The first concern is to keep those wires under control. The first type has wires fitting into the back of each key. Lift each wire out of the key until all 88 are detached. Using a metal rod the length of the hammer rest rail, force these up to the hammer rest rail and then further toward the action brackets. With some light, workable wire, tie this rod with the hammer rail to the action brackets. With this type of action, you will find it easiest to remove the keys from the piano prior to lifting out the action.

The second type has the guide rail. This must stay in place over the metal fingers or guide pins. First, being careful, undo the four mounting screws from the front of the guide rail, then push the guide rail down as far as possible on the abstracts. Using three or four damper dowels, slip each one down over a guide pin, one at each end and the others spaced along the rail. Tighten the set screws to keep them in place (See Figure 3). Remove the action by holding this guide rail with the hammer rail and two action brackets. The keys do not usually need to be removed.

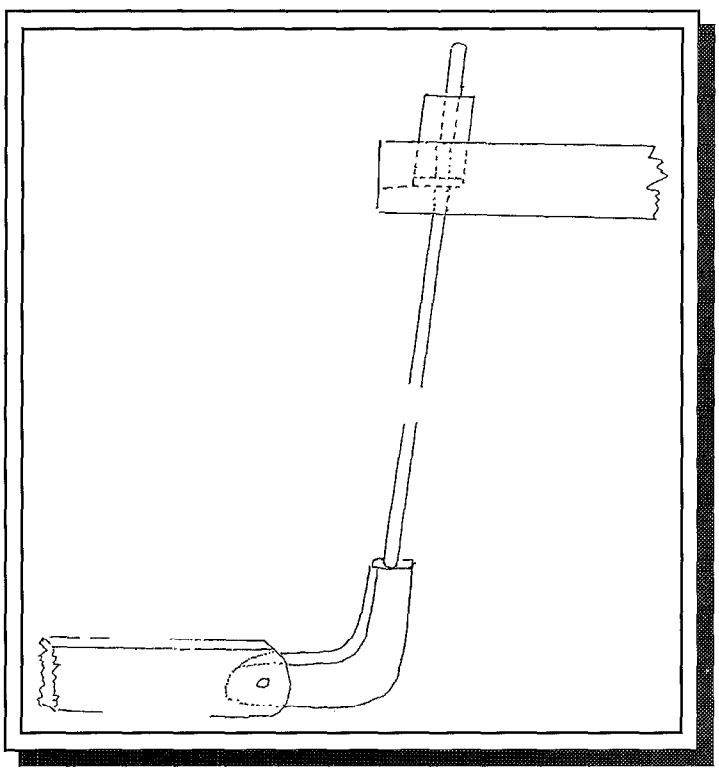


Figure 1

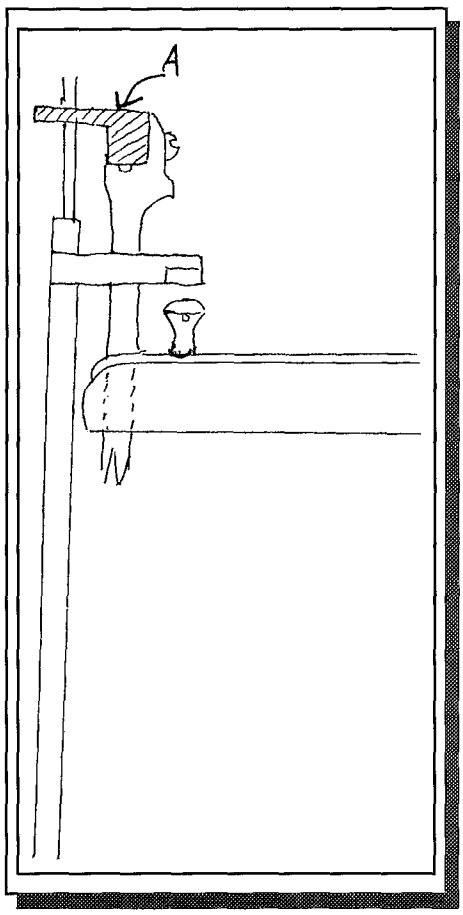


Figure 2

To Replace A Set Of Elbows

1) Clamp the action upside-down in your action clamps.

2) Remove all elbows from the action. This is often done by just snapping them off with your fingers. The piece left on the center pin can be crumbled to a fine powder with the points of needle-nose pliers

3) Remove the remaining elbow pieces from the wires. Usually you can just squeeze this with pliers and it will crumble off.

4) Turn your replacement elbows onto the wires by holding the wire tightly with a pair of pliers or Vise-grips. The threaded end will be brighter where it had been inside the plastic. Turn the wooden elbow on to that point.

5) Now you are ready to place the elbow onto the wippen. The center-pin pliers are the most useful here as they are less awkward than the double ended tool we like so well. Drive out the center pin. Set your new center pin into one side with the tip just peeking through (it will help you to find correct position as you force the elbow eye across it). Now with the double-ended tool, drive the pin through, holding the elbow in exact position so as to steer the center pin point through the hole in the other side of the wippen. Snip the center pin flush with the wood. Proceed in this manner until all are installed. You are now ready to return the action to the piano.

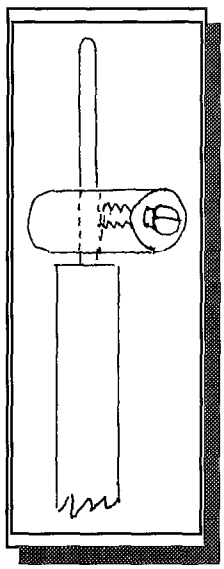


Figure 3

PACE

Professionals Advance through Continuing Education

LESSON PLAN

Technical Lesson #32

Grand Regulation - Part 13: Overview of the Grand Damper System & Correction of Sluggish Dampers

By Bill Spurlock, RPT
Sacramento Valley Chapter

This monthly lesson plan is designed to provide step-by-step instruction in essential skills. Chapters are encouraged to use this material as the basis for special Associate meetings, or for their regular meeting program, preferably in a hands-on format. This method allows the written information to be transformed into an actual skill for each member participating.

In Brief

This lesson will explain the basic operation of the damper system in grand pianos, and cover diagnosis and repair of sluggish dampers. Participants will see how the dampers must be adjusted in order to provide good damping, even lift by the key, even lift by the pedal, even clearance to the damper stop rail, and even sostenuto operation.

Getting Started

In order to pursue any serious study of piano technology, one must obtain basic resources. Catalogs from several piano supply houses, both large and small, are essential. Besides offering the necessary supplies, their pictures and item descriptions are valuable sources of information. Piano manufacturers' service manuals are also essential sources of valuable information. Most are available at no cost. Most important to participating in this Lesson Plan series are the PTG Exam Source Books, both the tuning and technical versions. Articles in these books will serve as reference material for the lessons.

Hands-on Session Setup

To teach this lesson in a hands-on format, you will need one or more grand pianos in good condition. New economy grade pianos in a dealership are probably best, since most damper adjustments will be close but will often exhibit minor problems and uneven adjustment. Since this lesson focuses on evenness of adjustment among all dampers, action models are not suitable to use.

Estimated Lesson Time

Approximately 1 1/2 hours. Participants should each take a turn at observing and correcting the damper problems described.

Tools & Materials Participants Must Bring

For this lesson, participants should obtain the following tools:

- Wire bending pliers
- Small flat-blade screwdriver
- Pin vise and 3/32" drill (or #37 drill as used in PACE Lesson #1)
- Awl
- Umbrella stay guide rail easing tool, modified as in Photo 5.
- Selection of general regulating tools

Assigned Prior Reading for Participants

PTG Technical Exam Source Book, pg. VIII.1 - V.III.15

General Instructions

A multitude of adjustments and conditions must be correct for dampers to work properly:

1) Damper felt must be the correct size, type, and in good condition.

2) Damper heads must be correctly aligned and squared to the strings (adjusted by damper wire bends #1 & 2 shown in Figure 1, by rotation of the wire in the damper top flange, and by fore-and-aft tilt of the damper head).

3) Damper heads must rise vertically (adjusted by bend #3).

4) Dampers must fall freely (adjusted by bend #4 and the fit of the guide rail bushings).

5) All dampers must lift at the same point in the key stroke.*

6) All dampers must lift evenly by the pedal.*

7) Total damper lift by each key must be uniform so that each damper is lifted very close to the stop rail, but not forced against it.*

8) Sostenuto tabs must be in a straight line.*

9) Dampers must lift the correct height with the pedal (adjusted by trapwork adjustments).

*Adjustments 5 through 8 are all primarily made by the setting of the damper top flange on the damper wire, so that the damper levers all sit in an even line and at the correct height at rest.

An entire series would be required to cover all these adjustments in depth, and is beyond the scope of these lessons. Instead, this and following lessons will cover primarily items 4 through 9 above, as well as some very common and easily solved damper problems.

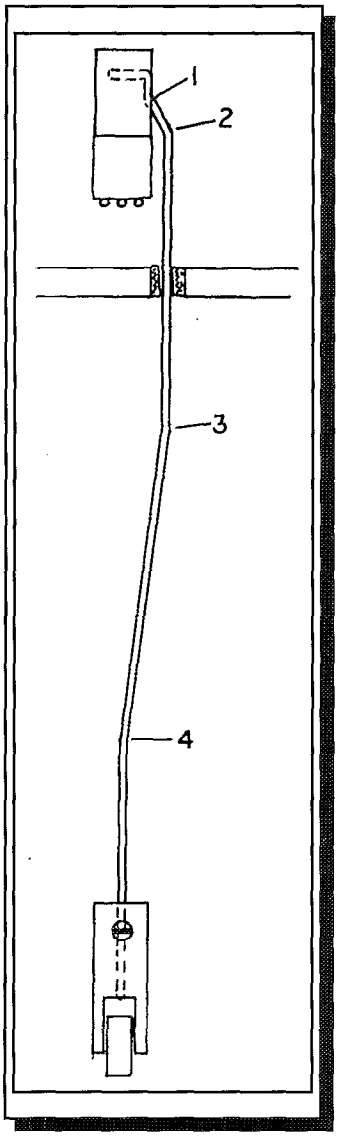
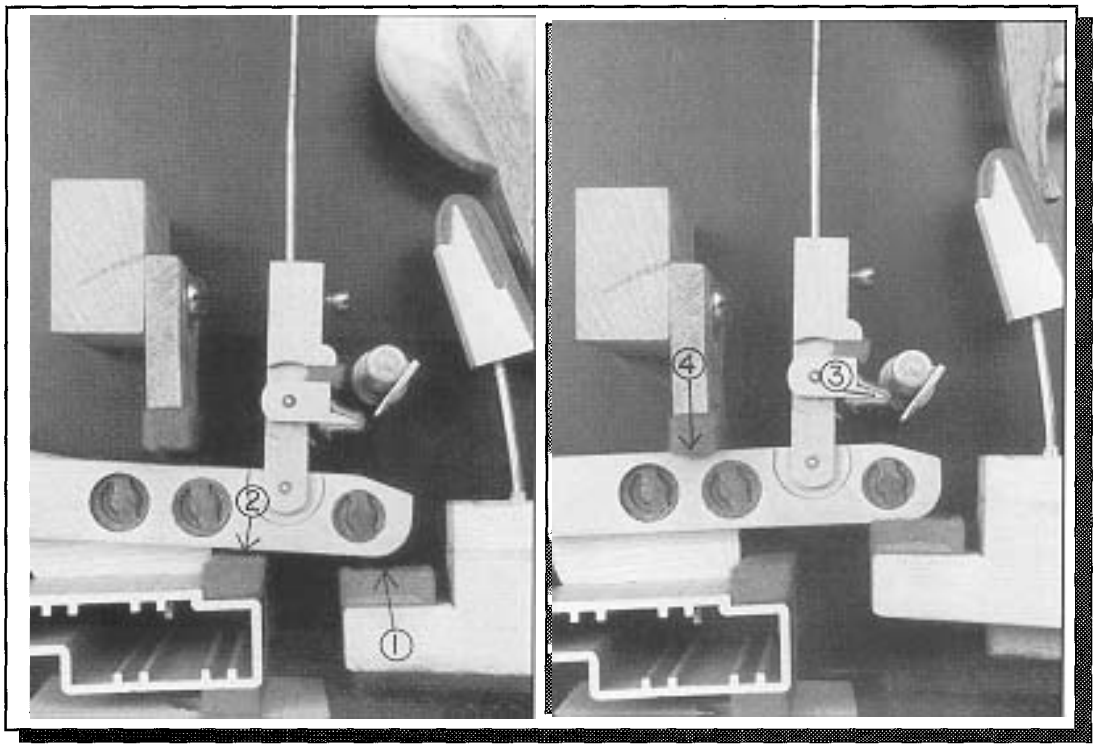


Figure 1: Damper wire bends and their functions:
- *Bend #1: used to stand the head vertically.*
- *Bend #2: used to adjust the side-to-side position of the damper head.*
- *Bend #3: used to make the wire segment between 2 & 3 vertical so the damper lifts vertically.*
- *Bend #4: used to make the lower end of the wire in line with the hole in the top flange, to eliminate any side force on the damper wire and flanges.*



Photos 1, left, & 2, right: Relationship of the damper levers to the keys, lift tray, and stop rail. The following four adjustments are all dependent upon the damper levers being the correct height and uniform in height when at rest:
1) Timing of lift by the keys.
2) Evenness of lift by the pedal.
3) Straight line of sostenuto tabs when lifted.
4) Evenness of damper levers to the stop rail when lifted.
Although key end felts and tray felt are individually adjustable for each damper lever, they should never be adjusted to compensate for an uneven line of damper levers. Set the levers in an even line first, then shim or adjust key end felt or tray felt for very fine adjustment only.

Correct and even damper lever height is the foundation of proper damper operation. See Photos 1 and 2. Damper lift timing by the keys is determined by the height of the damper levers at rest, in other words, by how far the damper wires are inserted into the top flanges before the set screws are tightened. Evenness of damper lift by the pedal is also determined by the height (evenness) of the damper levers at rest. Likewise the straight line of sostenuto tabs and the height of the lifted dampers in relation to the damper stop rail are both dependent upon the evenness of the damper levers at rest.

Setting the damper levers at the correct height and all at the same height is essential to: proper lift by the keys and by the pedal, proper sostenuto operation, and proper stop rail function. Of course, individual damper lift timing can be adjusted by shimming or trimming the key end felt. And uniform damper lift by the pedal can be achieved by shimming the damper tray felt (or adjusting capstans if present). Individual sostenuto tabs can even be shimmed in order to move them into a straight line. However, the damper stop rail is not independently adjustable for each damper lever. It is a straight, solid rail that must sit just at the upper limit of damper lever travel; therefore, all damper levers must sit in a straight line at rest. Adjustment of individual key end felts or tray felt or capstans should not be done if the levers are not first in a straight line. Lesson #33 will cover setting damper lever height, as well as how to make a simple jig for doing this job.

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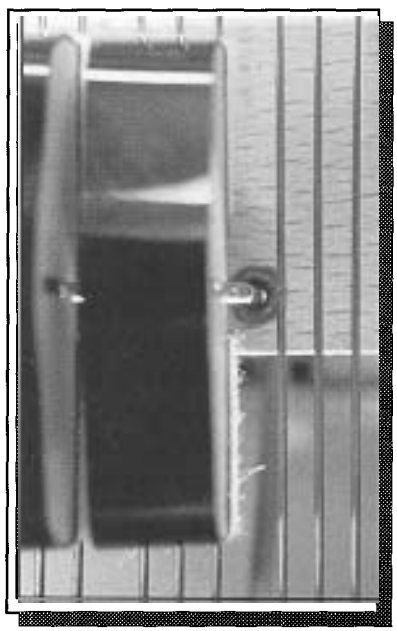

Photo 3: Test for clearance between guide rail and wire. Clearance is visible when wire is pushed to one side of the hole.

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Correcting the Sluggish Damper

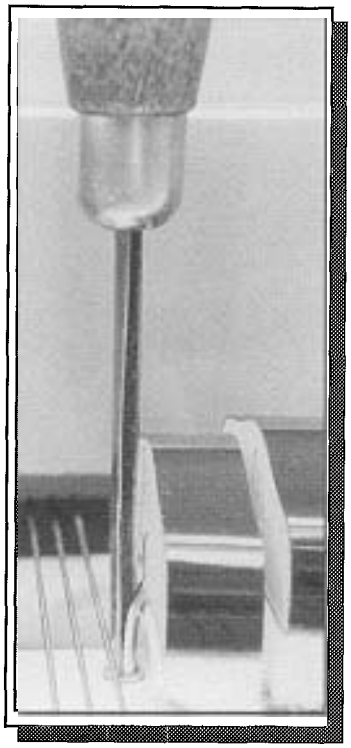


Photo 4: Easing a tight damper guide rail bushing with an "umbrella stay" tool from supply house. Inserted between the bushing and the wire, this tool enlarges the bushing by pressure. The tool is most effective when heated moderately. Use care not to push the bushings out of the rail, as most are not glued in.

Slow damper return can sometimes be seen by depressing the pedal and releasing instantly, watching for any dampers that fall more slowly than others. A more reliable test is to remove the action and flip each damper underlever up with a finger, watching its speed of fall and listening to the sound it makes when landing on the string. Sluggish dampers will appear to float down and land silently, while free ones will fall quickly and land with a slight thump.

The most common causes of slow damper return are a tight guide rail bushing or an incorrect bend #4. If this bend is incorrect, the lower end of the damper wire is not in line with the hole in the top flange. Forcing the wire into the top flange then creates a side force on the wire, pushing it against one side of the guide rail bushing and also binding the damper lever flange and top flange bushings. Other likely causes of slow damper return are tight pinning of the damper lever flange or top flange.

This problem can often be diagnosed, and even corrected, without removing the damper from the piano. First inspect the fit of the damper wire in the guide rail bushing while pulling the damper head slightly side to side. Using a strong light, you should be able to see a slight clearance to one side of the wire as it is forced to the side, as shown in Photo 3. If there is none, the problem may be a tight bushing or a combination of several problems. Ease the bushing slightly as described in Photo 4 and recheck. Note: once the bushing has a slight clearance, do not ease it further. Very little clearance is needed, so if the damper is still sluggish despite obvious clearance in the guide rail bushing, the problem is elsewhere.

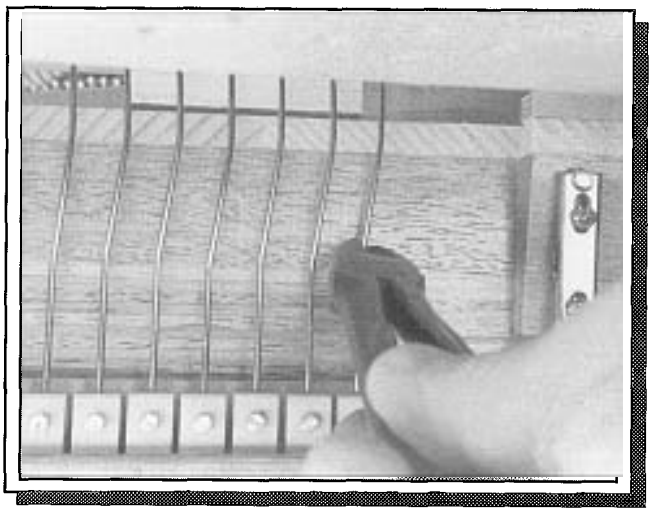


Photo 6: Adjusting the lower wire bend to eliminate side pressure of the damper wire in the guide rail bushing.

Next, remove the piano action and try to see whether the damper wire appears to be leaning against one side of the guide rail bushing: Step on the pedal to raise the dampers, then grasp the damper wire just below the guide rail and push gently side

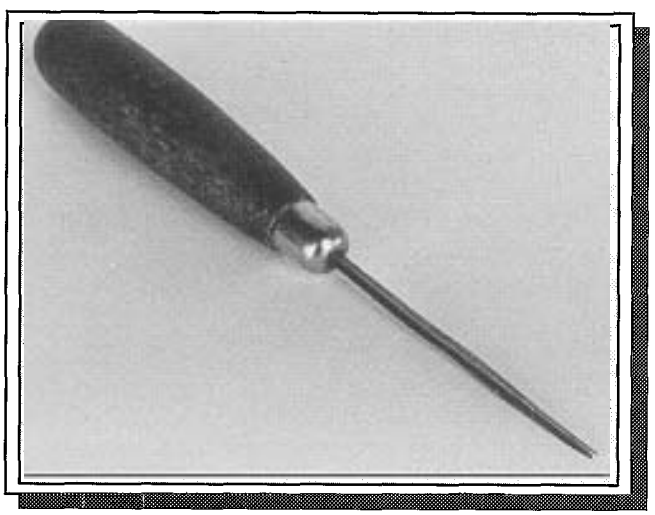


Photo 5: For best results, modify the umbrella stay tool by tapering and thinning the end by grinding or filing.

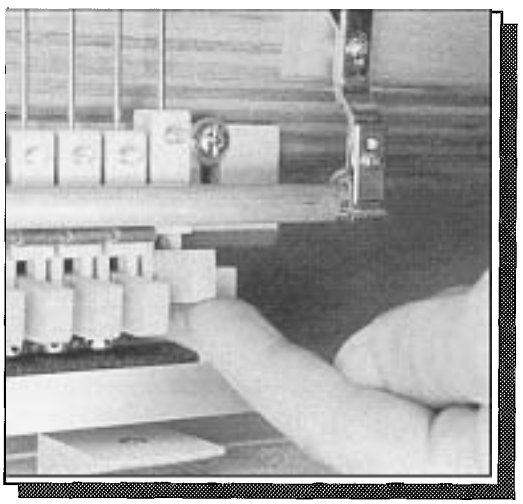


Photo 7: With the set screw loosened, test for proper lower wire bend by flipping the damper lever. It should slide up and down freely on the wire.

Photo 8: Using a 3/32" drill in a pin vise to ream a very tight guide rail bushing. Smooth the bushing with an awl afterwards.

to side, again using a strong light. If the wire does have a side force (and the bushing has a slight clearance), you will see the wire spring against one side of the hole when released. If this is the case, make a very slight adjustment to bend #4 using wire bending pliers as shown in Photo 6. Even if you are not sure whether a side force exists, you can make slight changes to bend #4 first one way, then the other, by trial and error to discover the adjustment that gives the fastest damper return.

If these tests are not conclusive, loosen the top flange set screw and test the accuracy of bend #4 by flipping the damper lever up and down as shown in Photo 7. If the bend is correct (and the wire is free of kinks or burrs), the lever flange should slide up and down the wire freely. This proves that the bottom of the wire is in line with the hole in the top flange. If the flange binds on the wire, adjust bend #4 again by trial and error until the flange is free on the wire.

Next, lift the damper out of the top flange and test whether it falls freely through the guide rail bushing. If extensive easing is needed, ream slightly using a 3/32" drill in a pin vise as shown in Photo 8. Be very careful not to push the bushing out of the rail, since most are not glued in. Compress and smooth the bushing with an awl before reinstalling the damper.

Finally, with the damper still removed, test the damper lever flange and top flange pinning by flipping the lever up and down. These centers must be very free. Repin as needed.

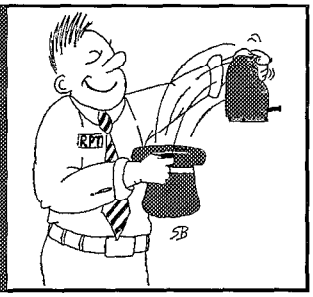
Exercises

The instructor should point out the features of the damper system on the pianos at hand, and each participant should make note of the key end felt, damper levers, lift tray, and stop rail.

Ideally, a grand can be found that exhibits a few sluggish dampers. Otherwise, sluggishness can be created by altering bend #4 slightly on a couple of dampers. Each participant should diagnose the problem by inspecting the guide rail bushing and adjusting bend #4 to restore free movement.

Grand Illusions ...

The Page for Serious Cases



Murray's Piano Water Beats Out Both Dole and Clinton!

	Murray's Piano Water	Clinton	Dole
Keeps piano action moist	Yes	No	No
Fits easily in tool case	Yes	No	No
Triple filtered for purity	Yes	No	No
Lifetime guarantee	Yes	No	No
In the pocket of special interests	No	Yes	Yes
Utterly transparent	Yes	Yes	Yes
Feels your pain	No	Yes	No

PIANO Murray's WATER

We're busy making water for you.

String-So-Soft

By Doug McKay

We've come a long way from the days of pounding away at hammer heads with a voicing tool. I really used to mess up my shoulder and neck muscles that way. Now we all use hammer softening solutions instead. A little Downy on the felt, and you're in business! I like to use one of those big orange Wonder-Mops for production work.

But recently when I was soaking a set of new hammers, I wondered if maybe I didn't have this whole voicing thing upside down. We work and work to get the *hammer* soft, and the strings are just as hard as ever! (If you've ever gotten poked by the end of one, you know what I'm talking about).

That's why I'm tickled pink to announce our Valley Hi Engineers' newest baby: String-So-Soft®. This product, a mixture of fabric softener, naval jelly, and secret sauce, is guaranteed to soften strings. Just swab it on with the foam applicator (included), and those strings will be as mushy as catgut in no time. It even smells great. And just between you and me, it's a super insect repellent!

Piano work is hard enough. Shouldn't your strings be soft? String-So-Soft®.

Doug McKay, Murray's Piano Water and Nancy Garfiled may be contacted c/o Mark Stivers, RPT, of Sacramento, Calif.

Hammer Recipes

By Nancy Garfield

I recently read an article in which the author described passing each hammer head of a piano through a vent of hot (is there any other kind?) steam.

I sometimes steam hammers, too, but I find the results much more satisfying if I replace the plain water with chicken or beef broth. Better still is a mixture of vinegar, water, and minced garlic, with just a touch of *patis* (a pungent Filipino fish sauce). If you have time, salt and pepper the heads on the night before.

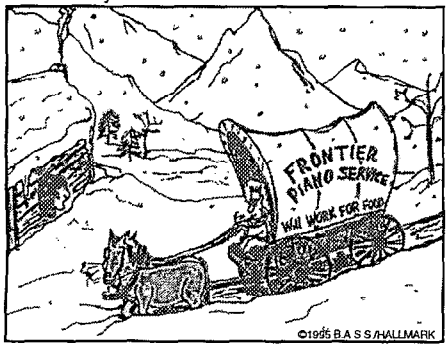
People who worry about fat sometimes ask me whether it's okay to substitute margarine for butter when sautéing hammer heads. Silly people! As far as I know, no one can absorb fat through a piano. So go ahead and use butter—your client will love the difference.

Occasionally—far too seldom, I must say—I get a customer for whom price is no object. That's when I go all the way with a classic white sauce. In a medium saucepan, melt butter. Stir in flour, salt, pepper, and paprika. Gradually stir in milk; cook, stirring constantly, until thickened. With a tiny spoon, apply sauce to strike point of hammer. Play in immediately. When dry, file hammers and voice. Serves one.

And then there are people who insist on battering and deep-frying hammers. Come on, that's *nuts!*

PIANOMAN Adventures *by Alan Hallmark*

In the annals of the most demanding customer, one incident stands out... Christmas 1846 – Tuning for the Donner Party.



"We ain't got no pianne. But, we'd be glad to have YOU for supper!"

PTG Review
PIANO TECHNICIANS GUILD
Dedicated To PTG News • Interests & Organizational Activities

PTG & The Piano Industry

EDITOR'S NOTE: This article appeared in a recent issue of Piano & Keyboard *magazine, and is reprinted here because I felt it would be of interest to our readership as well.*

The music industry is served by a goodly number of non-profit organizations, each of which targets a special interest group or advocates a particular message. For the last 18 years, I have been active in the Piano Technicians Guild, which has about 3,900 individual members, all of whom share an interest in piano technology and the inner workings of this marvelous instrument. Piano technology seems to attract the independent thinker and the nonconformist. Being self-employed, most technicians are accustomed to following their own dictates and are often inherently solitary by nature. Needless to say, forging a consensus amongst technicians is no easy task for any association, large or small.

The Piano Technicians Guild was formed in 1957, but can trace its roots in earlier organizations back to 1913. The profession itself, of course, evolved with the piano. Early keyboard instruments such as the harpsichord were usually tuned by the player. Thomas Jefferson, for instance, left a written record of the tuning scheme he used on his instrument. However, as the piano evolved and became more complex, a division of labor occurred. The mechanical complexities required more study, skill and art, and piano technology itself advanced rapidly in the 19th century to keep pace with the growing demands of pianists and the literature.

In America, William Braid White began to write and speak about organizing piano technicians after the turn of the century. Study of his early writing and early technical journals of the various tuners' associations reveals themes familiar to the modern technician: the need to educate the public on the value of quality piano care, the importance of professionalism, and the value of continuing education.

On the brink of the 21st century, the Piano Technicians Guild finds itself, like so many music industry organizations, deeply affected by a popular culture that does not encourage active music participation as well as by a piano industry in dramatic decline. In the earlier days of PTG, the focus was of necessity more internal; the leadership worked to establish member services such as our technical *Journal* and annual conventions, to grow the membership base and establish a sound financial base, and to establish good relationships with other industry groups to promote the piano in our society. At the ripe age of 38, PTG is stable and looking outward more than ever, sensing correctly that the future for the piano is uncertain. If the piano is to maintain its central role in musical culture, organizations like PTG will need to forge active alliances with others who share this concern.

This article will review some of the recent efforts PTG has made on behalf of its members to better serve the profession and the industry. We'll also look at parallel efforts being made by other associations.

Certification Programs

PTG has created the title "Registered Piano Technician" (RPT) to designate those members who have passed the RPT Examinations, a battery of tests consisting of written, tuning and technical exams. Throughout its history, PTG has always had a test, but only in the 1980s was it extensively studied, modified and standardized. The refinement of the exams brought on a period of intense learning and discussion. In the process of developing the tuning exam, for instance, new tuning checks were developed and our understanding of tuning theory advanced markedly. Thus PTG's commitment to developing a minimum standard and defining it by a test works to elevate the skills of all who participate, whether as test developer, mentor, examiner or examinee.

As with most efforts to introduce standards, PTG's testing program has not been without some political strife. The net effect of refinement and standardization has been to make the exams harder. Thus newly minted RPTs are held to a higher standard than those who were grandfathered in under the old exams. (Our colleagues in the Canadian Association of Piano Technicians are facing this same phenomenon.) Currently, about 60 percent of the membership is classified as RPT, but only a small fraction of those have taken the RPT exam in its current form. All members who are not RPT are classified Associates, and over the last decades the number and percentage of Associates has increased. Some in PTG welcome the steady influx of new learners and talent, while others believe that professionalism is diluted when so many members are untested.

Music Teachers National Association, now some 21,000 strong, also administers a voluntary certification program. Historically, about 15 percent of the MTNA has qualified for the title "Nationally Certified Teacher of Music," and now about 4,000 are so classified. Requirements for this title have also grown more stringent; teachers may qualify by completing academic degrees or passing exams or some combination of the two. In addition, videotapes of a teaching session and student performances are submitted and certified teachers must renew every five years, demonstrating their involvement in continuing education.

In both organizations the purpose of certification programs is to increase

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PTG & The Piano Industry

Continued from Previous Page

professionalism and to provide a standard that the public can recognize. And ultimately, this noble purpose promotes enjoyment of the piano. A host of activities and pursuits compete for consumers' attention, so creative teachers and well-maintained pianos can make a difference in attracting musicians of all ages to the joys of the piano.

Emphasizing Professionalism

The arts in our society often seem to exist on the fringes, somehow separate from "serious" occupations. And indeed, many piano technicians and teachers are part-time workers, supplementing another family income or retirement pension. For the full-time professional piano technician, it is a challenge to earn an adequate income in today's economy. Accordingly, PTG has recently developed new client education materials, designed to increase understanding of the instrument and explain the benefits of quality piano care. And, in our first foray onto the Internet, the information from these brochures and more has been placed on-line, through our new Web Page "http://www.prairienet.org/arts/ptg/homepage.html". A professionally designed logo, a business resource manual, and business-oriented seminar classes have also been created for technicians desiring to update their print materials and business promotional efforts.

The education of the piano technician and teacher usually focuses on the skills needed to do the job, and often neglects the business and career development skills needed. For piano technicians, the training period is lengthy, and the number of salaried entry-level jobs few. Most technicians must grow their service businesses over time, beginning part-time and building a client base gradually. A 1993 survey of PTG members revealed that while 51 percent of members had completed college, 55 percent of members reported total business receipts (before expenses) of less than $30,000. A recent survey of MTNA members revealed a median income of $8900 for the reporting members. Clearly, neither technicians not teachers are in it for the money! Data also seem to indicate that young people are not attracted to membership in either organization. PTG reports that 15 percent of its membership is over 65, the average age is 47, and only 12 percent of its membership is under the age of 35. MTNA reports that 22 percent of its membership is over 60, the average age is 48, and only six percent of its membership is under 30.

To survive, a profession must offer a competitive income. By working to enhance the professional image and business skills of technicians, PTG hopes to help them make their businesses more viable.

Continuing Education

The primary tie that binds technicians together in PTG is our passion for learning ever more about piano technology. Acting on the results of a Member Needs Survey done in 1993, we have acted to bolster our traditional educational offerings with improved publications and a more comprehensive, up-to-date approach.

For years, the *Piano Technicians Journal* has been the most important member benefit, respected worldwide for its quality content. Within the past year the *Journal* has received a new editorial structure and a fresh format. To preserve the wealth of information from past *Journals*, articles on various topics have been compiled into book form. Several new books have also been published, the most recent being a comprehensive curriculum on vertical piano regulation designed for classroom use. Surprisingly, despite the long history of the piano, there is still a need for more quality written material in our field. Our members re-emphasized their support for a strong educational emphasis at PTG's last legislative Council session.

Seminars and conventions are popular venues for information exchange in PTG. At the typical convention, technicians are in class at least six hours per day, and are found in the hallways between and after classes, still talking about pianos. The fervor for learning a new tip or technique is matched by the instructors' enthusiasm for sharing their expertise with fellow technicians.

Piano manufacturers have always been partners at these events, providing top quality instructors from their technical support staffs. However, in recent years the number of PTG seminars has increased dramatically, while manufacturers have been experiencing declining sales and some downsizing. Seminar organizers have become aware of the need to use resources effectively.

PTG has begun to plan some topical seminars, the first entitled BusinessCraft, to maximize use of in-house resources and personnel. There has also been a trend toward applied-skills training; the hands-on format is increasingly recognized as more effective than lecture-only instruction. However, hands-on instruction requires additional instructors and props and thus further strains resources.

Computer technology has made its presence felt in both the teaching and the technical communities. Teachers are beginning to use computer labs in their studios, incorporate CD playback systems into their methods, and to address the digital keyboard as a new musical instrument. For the technician, the computer has shed new light on a long standing internal debate: the relative merits of aural and electronically-assisted tuning methods. Interestingly, the advent of electronic tuning devices has spawned a more rigorous analysis of aural tuning principles. The debate and ensuing dialog has deepened our understanding of tuning theory and practice. The result has been improvement in the skills of all tuners, whether they use strictly aural methods or incorporate computer analysis as an additional tool. Ultimately, consumers have benefited.

Future Plans

This fall, PTG will launch its first formal long-range planning sessions. Like many associations, we have been so occupied with multiple challenges and initiatives throughout our 38 years that planning seemed a luxury; survival at times was the issue. However, now, with the piano industry as a whole facing uncertainty as the 21st century approaches, PTG is poised to become a stronger, more active partner to other piano professionals. If the membership is able to unite around a clear mission, PTG will continue to mature; if too much energy is invested in internal disputes, this potential will go untapped.

Continued on Next Page

Review — "Rebuilding Your Piano"

Paul Revenko-Jones, RPT
$24.95 from Brookside Press

By Tom Patten, RPT

One of the most frustrating challenges in rebuilding a piano can be communicating with the customer. Frequently we find that customers know that *something* is wrong with their instrument, and it is our job as technicians to give them enough education to make proper decisions as to the best course of action. The amount of education will vary from situation to situation. One customer might declare "Take it and fix it!" and another might need to become (intellectually at least) involved with the process from beginning to end.

I happen to love standing around a piano and explaining its structure, strengths, and weakness to an owner, but a large portion of this session has always been spent establishing nomenclature so that the customer and I share a language (let's face it: terms we use daily might as well be Greek to most of the world). I doubt that I will ever be as *consistently* good at this very important task as I would like, simply because one approach does not always apply to every circumstance. In the worst case scenarios, the customer will glaze over, drift off, and, in short, be left in the dust while I am describing repetition levers or downbearing.

Even if owners understand your presentation, the process takes a long time. It is an investment that we make in securing a rebuilding job, and demonstrating the ever-increasing cost of rebuilding to a customer is sometimes an enormous challenge in itself.

Lately I have been using a 20-minute videotape, titled "Rebuilding Your Piano," featuring Paul Revenko-Jones, RPT. It was produced and directed by Diane York, and is available through Brookside Press (Larry Fine, author of *The Piano Book*).

This short tape has been a blessing. I have lent it to customers who were thinking of having major work done to their pianos, usually accompanied by a detailed estimate of the work proposed, and tell them to please return the tape in three days. It is refreshing how clearly they seem to understand the process of rebuilding after watching the tape. They can compare what they see with what I have written. *Then* we can get together and stand around the piano, and they know some of what I'm talking about.

I have found that if this common language is established between technician and customer, it saves a tremendous amount of time. The tape is detailed enough to give insight and teach language, and yet short enough to keep the customer from information overload.

The tape begins with a completed Chickering from the 1880s, and through the course of the tape we see bits and pieces of half a dozen pianos in the process of being rebuilt. The various processes are clearly explained and shot. This is not a slick, jazzed-up production; the camera work is adequate and sufficient to get the job done. I really like the soundtrack, which is snatches of Glenn Gould playing Bach. It fades in and out, as if to remind technician and customer alike that the music is, after all, what all this technical jargon is for.

I also appreciated the footage of Revenko-Jones removing an old sound board with the business end of a 2x4. It is not bad for customers to see the brutal truth, although I'm sure he thought long and hard before deciding to include this necessarily violent act on the tape.

Options are explained and left open (shimming a board as opposed to replacement, refurbishing repetition levers as opposed to replacement, etc.). This is of great benefit to the technician, who can explain the needs of the piano in question and still have the validation of the expert on the videotape. Revenko-Jones states at one point that rebuilding takes from 250 to 400 hours. Thank you! This gives most customers an idea why these projects take time (and hence money).

I have used this videotape over the past year, and it has helped "close the deal" on rebuilding work for me. It has saved me time (hence money), it has enabled the customer to become a part of the procedure (without having them underfoot in the shop *ad nauseam*), and it has served as an "outside expert" that validates much of what I say.

The shortcomings of the tape are few; my largest concern is that the customer understand exactly what is wrong with the pinblock and the action *before* being given the tape. The tape never makes it completely clear *why* a pinblock, for example, needs to be replaced; that is the technician's job, and the technician's judgment.

The tape is nicely packaged with an exploded view of a grand piano, reprinted from *The Piano Book*. This illustration is a good reference point for the customer.

I look forward to using this valuable tool over the years to come.

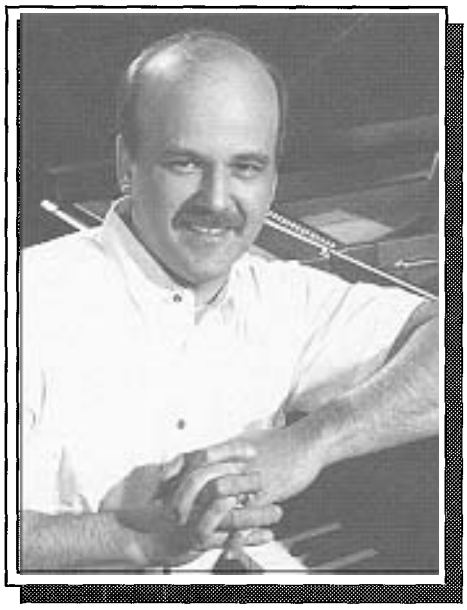
PTG & The Piano Industry

The SPELLS program, National Piano Foundation's market development program which spreads the message of the joys of piano participation, has found PTG to be an eager and vital player in numerous cities across the continent. Building upon the seeds sown in many local communities, piano technicians, teachers, and dealers are finding new encouragement and excitement in uniting to promote the piano to their friends and neighbors.

PTG, MTNA, NPF and other piano-oriented associations find their fate inextricably tied to each other, to the piano industry, to our popular culture, to new technology, and the challenges of the world economy. Karl Bruhn once commented that the problem with most associations is that the guns are pointed inward, fighting for turf, instead of pointed outward at the real enemy. The real enemy is indifference to the piano. We who love the instrument want to see it thrive, not die of neglect. Thus, the challenge is clear: to rise above the smaller concerns that distract us daily and work together to deliver to our communities the joys of the piano. This struggle involves us all: teachers, no matter what teaching method they advocate; technicians, no matter what their particular expertise; and dealers, no matter what brands they sell.

Past Shapes Future for Durben

From nearly day one, Central West Regional Vice President Dave Durben has been an RPT in the Piano Technicians Guild.



CW RVP Dave Durben, RPT

"I entered and tested virtually on the same day," he said. "That's the way they did it at the time."

More than 17 years ago Dave joined the Guild, "because I wanted to learn more about what I was doing."

While he has worked as a mail clerk, welder and bakery machine operator, since he was "knee high," he has always able to tell when a piano was out of tune.

Although he has always been interested in music, Dave didn't want a teaching or performing career, he wanted to work with his hands. Dave discussed the tuning business with the tuner who serviced his family's piano, and he advised Dave to apply himself to it, saying "If you work hard, you'll never be out of work."

"The rest," Dave said, "as they say, is history."

Dave's foray into piano tuning began with an introductory piano and tuning class at the McPhail Center for the Arts in Minneapolis, Minn, in 1976.

He worked for a Baldwin dealer for a year before setting out on his own, and for 19 of the past 20 years he has been self-employed.

Setting off on his own is nothing new for Durben. With the help of Gracie Wagner and Michael Drost, and chapter members Dennis Berryhill, Paul Hardy and Stan Kroeker he got the Minnkota Chapter back on its feet. "It had languished for 12 years, it was dead," he said of the chapter. "There was no activity whatsoever."

Dave said, "I decided I had worked in a vacuum long enough, and decided to do something about it. We got it (the chapter) going, and got it active."

He started out with a letter writing campaign, writing to tuners in North Dakota and upper Minnesota. By 1988 the chapter had been revitalized, and he served as its president until 1992.

During that time membership in the chapter tripled, he said. A considerable feat considering meetings are a 400 mile one-way trip for some of the chapters members. "We've got some members who haven't missed a meeting. I think I've only missed one."

The chapter has grown to the point where it may soon spin off a new chapter. According to Dave, four RPTs and an Associate in Manitoba want to form their own chapter. "That (chapter) will explode once they get one more RPT and can form their own (chapter)," he said.

Getting out of a vacuum has paid off for Durben. "I feel like I learned my trade all over, starting in 1987," Dave said.

Dave served on a number of committees for the Guild, including the convention rotation committee, the institute document update committee, and taught chapter classes before being elected the Central West RVP at the 1994 PTG Convention in Kansas City. Since joining the Board, Dave has continued to teach at the regional level.

Not only has his chapter and experience in the Guild grown, but the Guild itself has grown. "From the standpoint of (quality) educational offerings, I think we've gained light years, from my experience," he said. "The rank and file that I've talked to love what we're doing," Dave said.

Durben said, "We have matured quite a bit as an organization, but we have a long way to go. "Financially, we've turned around 180 degrees. that's real obvious," he said.

"I can't help but feel that if we do the right things now, we have nothing but good things to look forward to," Dave said. But the key is doing the right things now, he said, pointing to Kimball Pianos which discontinued producing grand pianos last year and announcing that they were getting out of the piano manufacturing business this year.

"With Kimball folding," Durben said, "it's a signal to us to look around. If that wasn't a wake up call, I don't know what is."

Looking to the future, Dave said, "I think, depending at least in part on the industry, hopefully in the not to distant future, to see a rebound in the manufacturing sector, but it might not be for 20 years down the road. "But it could die, or just be the top quality manufacturers," he said. "But I don't see that. I think it will rebound."

In the meantime, Dave said, "I think rebuilding and rebuilders will be more important to us because somebody has to maintain what's out there."

Where does that put the Piano Technicians Guild? "I don't believe that the general public will ever know who the PTG is, nor is it important. We're just too small a facet (of society). It's more important to make ourselves known to the industry." PTJ

"I can't help but feel that if we do the right things now, we have nothing but good things to look forward to."

Some Enchanted Seminar, You May Teach a Stranger

Tips & Suggestions for PTG Instructors

By Evelyn Smith, RPT, Assistant Institute Director

Teaching is the backbone of PTG. Sharing what we know about pianos is a big part of why we come together at chapter technicals, regional seminars, and the annual institute. Almost all of us can name a class or an instructor that has turned on a light bulb for us, or perhaps even helped change the course of our career.

But the prospect of becoming a teacher and presenting information effectively can be daunting, even if the subject matter is second nature to us. We're technicians, after all, not professors. And it's no joke that public speaking is ranked the number one fear of most people.

The following suggestions are offered to help make teaching easier and to encourage people who've never taught before to take the plunge. Whether you're a novice or you've logged hundred of hours in front of a classroom, hopefully you'll find some useful new ideas that will help you experience teaching as the fun, satisfying job it's meant to be.

No two people present information the same way, and these suggestions aren't meant to create a one-style-fits-all teaching model. Take these ideas and develop your own style; that's part of the enjoyment of teaching.

If you're hesitant to try you hand at teaching, take inspiration from the spirit of Mae West, who said, "Between two evils, I always pick the one I never tried before." Think of your reward: everyone knows that the best way to learn something is to teach it. And ask any instructor you know—it's likely they'll tell you that passing along a new idea to someone is one of life's most rewarding experiences.

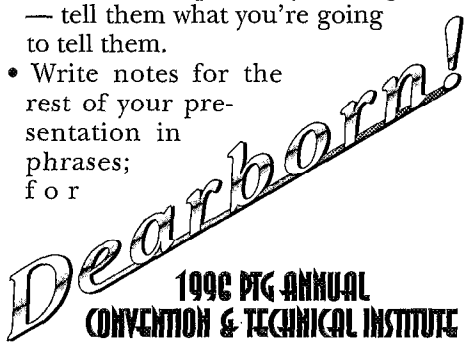
Preparing Your Class

Ask yourself questions about your expected audience.

- What do the students want to know about this topic?
- What one or two main ideas do you want them to learn?
- How will you teach your subject to students who are at various skill levels?

Plan Your Presentation

- Plan for the time allotted, don't try to cover too much material.
- Make an outline — have a main theme with three to five major points.
- Prepare a good introduction: get your audience's attention, establish your credibility, let them know what's in it for them, and preview your subject — tell them what you're going to tell them.
- Write notes for the rest of your presentation in phrases; for an easy-to-read format, print it on the top two-thirds of 8 1/2 x 11" sheets of paper in 14-point type.
- Use highlighter pen for your main points, and draw a box around sections of the class that could be omitted if time runs short.
- Remember to allow time for Q & A and audience participation.



Be creative in how you will involve your audience.

- Try to vary from lecture format.
- Get the audience involved with a variety of activities, such as:

a. Problem-solving in pairs or small groups

b. Short writing exercises (not too long or class may lose momentum)

c. Students trying a procedure in front of the class.

Write your class description carefully.

- Base your description on what you plan to do; a common complaint in PTG Institute evaluations is that a class didn't match the class description.

Practice your class several times.

- Rehearsing takes the guesswork out of class length, and allows you to time the segments of your class.
- Practice increases confidence and relaxes you better than anything else you can do.
- Give your class to your local chapter as a technical, and hand-out a simple evaluation form at the end.
- Find a couple of technician friends to be an audience, and ask for suggestions.
- Audio and/or video tape your presentation, or use a mirror, and critique yourself!

Try to think of visual aids to enhance the learning experience.

- Make use of slides, overheads, flip charts.
- If you want to use a live video setup, plan ahead carefully.
- Remember that students learn 20 percent of what they hear, 50 percent of what they hear and see, and 90 percent of what they see while doing.
- Prepare clear handouts; bring enough copies.

If you're teaching in an unfamiliar location, check out the classroom.

- When you arrive, visit your classroom before you teach to see the room size and layout.
- At least 45 minutes before you teach, check the room to make sure audio/visuals and seating arrangement are okay.

In the Classroom

Keep control, but be flexible and relaxed.

- Don't let a talkative student dominate the discussion, even if the student is knowledgeable.

Smile — project ease, confidence, and authority.

- Make eye contact, and use students' names whenever possible.
- Come out from behind podium.
- Speak clearly, use a mike if needed; ask if students can hear you and can see audio/visuals.

Use appropriate humor to help connect with your students.

- Use humor that is at no one's expense.
- Throughout the class, be careful of using words that may offend.

Be positive, not negative.

- Don't run down other technicians, products, or manufacturers.

Get class participation early in the class period.

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Some Enchanted Seminar, You May Teach a Stranger

Continued from Previous Page

- If it's a small class, have students say their name, and perhaps what they hope to learn.
- Remember that active learning is more effective than passive.

Stay on the subject; don't go off on tangents.

- Follow your outline and pace yourself so that you don't run out of time at the end (another complaint frequently found on institute class evaluations).

Decide ahead of time how and when you'll handle questions, and let students know.

- Never belittle a question or questioner.
- Try rephrasing questions to make sure everyone heard and understood the question.
- Tell a hostile, novice, or off-the-wall questioner that you'll answer their questions after class.

Summarize your main ideas, and end on time.

- Respect students' time by not running over; if you have more material to cover or want to stay late to answer questions, end the class and offer to stay longer for those who have the time.
- Repeat your main points, and thank them for their time.
- Allow students the opportunity to clap for you to show their appreciation.

For More Information

Visit your public library to get helpful books and videos like these:

- Angus, Helen. *Leading Workshops, Seminars, and Training Sessions.* Self-Counsel Business Series, Self-Counsel Press, 1704 N. State St., Bellingham, WA.
- Brody, Marjorie; and Kent, Shawn. *Power Presentations: How to Connect With Your Audience and Sell Your Ideas.* John Wiley and Sons, Inc.
- Sarnoff, Dorothy. *Never Be Nervous Again.* Crown Publishers, NY.
- "Delivering Successful Presentations," American Management Association, FYI Video, 28 min.
- "Be Prepared to Speak," Toastmasters International Communication Series, Kantola Productions, San Francisco, CA, 27 minutes.

Place Your "Hands-On" This

Now that you have had a chance to read through the list of classes and their descriptions for the Dearborn Convention, I hope they have given you some added incentive to attend, that is if you have not already registered. If you are still trying to decide, consider this: there will be over 200 class periods filled with piano related educational opportunities unmatched anywhere. If its "Hands-On" classes that meet your needs the opportunity is endless. "Hands-On Vertical Regulation" and "Hands-On Grand Regulation" are each three hours of intense regulation with personalized tutoring. What better way is there to perfect your skills than to actually regulate with experienced instructors providing helpful tips while encouraging the highest quality regulation.

A new class, "Applied Skills," is another "Hands-On" opportunity where individuals can receive individualized help in a number of skills ranging from hammershaping to grand lyre adjustments. This is also a three-hour class where participants can pick and choose activities of their choice.

Maybe improving your tuning skills is what you are after. Tutoring classes are available to give you opportunities to improve your skills whether it's temperament, unisons, high treble, low bass, or octaves. It may be that you would like your tuning critiqued or you would like a lesson on electronic tuning. Whatever the case tutoring is available to assist you with your tuning skills.

I don't want to forget the "Special Business Class" which could also be considered "Hands-On." "The Ultimate in Time Management: Ford Time Management" is designed specifically for those who would like to become more organized by learning to prioritize, manage time and daily activities, become more productive, earn more money and reduce stress. No matter how proficient we are as a technician we are not reaching our full potential if we lack time management skills. If the materials and information from this class are put to use you will

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Exhibitor Showcase Classes a First

This year we will be trying something new for PTG conventions. Exhibitors will be giving "Showcase" classes throughout the convention in 40 minute and 90 minute segments.

Showcase classes are purchased by the exhibitors. They may give classes of their choice on subjects that may include the introduction of new products, instructions on the use of their products, tours of factories and facilities, history of their company or explain the services they offer.

As of March 15, 1996, our publication deadline, the following exhibitors have signed up:

PianoDisc will give an in-depth class on the installation and service of their new Quiettime System. You will learn the skills that lead to outstanding income opportunities with America's most exciting new music product. *Webb Phillips and Associates* will answer all your questions on how to make easy wood repairs in their class. *Steinway & Sons* will have Henry Z. Steinway, former president and great-grandson of it's founder, as a guest speaker offering background and insight into the prestigious company his family created in 1853. In the *Pianotek Supply Company's* showcase you will find out more about the unique services they offer including hammer duplication, key recovering, pinblock and bridge duplication and more. *Brooks Ltd.* will present a showcase that will include a tour of their facility, products and services. Learn hammer boring for knowledge and easy phone ordering, using pre-hung hammers and new products.

The above is just a sampling of what to expect in showcase classes. We expect many more exhibitors to be giving showcases. Watch for flyers and advertisements from suppliers and manufacturers as to their showcase times and possible promotions in these classes.

Showcase classes are a great way to get to know suppliers and manufacturers on a more personal level. All technicians will gain greatly by attending these classes.

Showcases are just one more reason you should be in Dearborn!

— Wally Brooks, RPT
Assistant Institute Director

Historic Sights to See in Dearborn

Greenfield Village

Greenfield Village was built in 1927 and is billed as the world's largest outdoor museum. Each year more than one million tourists visit this unique archive of American history.

Henry Ford was always interested in collecting antiques. In 1924 he purchased the Wayside Inn in South Sudbury, Mass. All the artifacts were loaded into box cars, transported to Michigan, and stored in an old Ford plant.

Construction on the Village began in 1927. It was designed to preserve the old community setting. The general store was the first building to be brought in.

An area in the village was also set aside to highlight Thomas Edison's contributions to industry. Edison came to Dearborn in September 1928 to supervise the reconstruction of his research facility from Menlo Park, NJ. A total of six buildings were taken from New Jersey and placed in the Village, including the Sarah Jordan Boardinghouse where Edison's employees often stayed. Thomas Edison was very impressed with the efforts by the staff in restoring his facilities. When asked "Is it just like you remembered?" He replied "No, it was never this clean."

A gala dedication ceremony took place on October 21, 1929. Ford planned the event to coincide with the 50th anniversary of the invention of incandescent light. Many prominent people attended the event, including President Herbert Hoover, Orville Wright, Thomas Edison, Madame Curie, and Will Rogers.

Soon after the dedication celebration more buildings were moved to the Village, including the birthplace and workshop of Wilbur and Orville Wright, the William Holmes McGuffey birthplace, and the courthouse where Abraham Lincoln practiced law.

Today Greenfield Village is home to more than 100 historic structures on 81 acres. Henry Ford's main goal was to preserve the American experience and share it with fellow citizens.

Henry Ford Museum

The Henry Ford Museum is located next to Greenfield Village. The 12-acre indoor museum contains numerous permanent exhibits, including the Automobile in American Life, Made In America, the Innovation Station and exhibits featuring domestic life in America, agriculture, communications, transportation, glass and furniture. Most of the artifacts date after 1800.

The newest exhibit is the Motown Sound: The Music and the Story. This exhibit features the artists and people who made Motown Records possible, emphasizing the Detroit community and the African-American culture during the Motown Music era.

The main features in the Museum are the Lunar Rover, the Presidential vehicles, and the chair in which Abraham Lincoln was assassinated, from the Ford's Theater in Washington, D.C. In the Automobile in American Life exhibition, you'll discover your favorite classic auto,

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Place Your "Hands-On" This

Continued from Previous Page

become more organized, not only with your work and business but with your everyday life, and that will pay dividends for years to come. There is a fee for this class but it is a fraction of what their normal fee of $140 is. Fords Fairlane Training and Development Center has been gracious enough to offer this class to PTG for the cost of materials alone which is $60. This is a bargain so if you are at all interested sign up soon. This is a half-day class which is offered once and there is a limit of 40 participants.

Now if that isn't enough "Hands-on" consider taking Mark Bisso's class, "Fundamentals of Key Rebushing." This will be an informal "Hands-On" class focusing on everything from bushing removal to glue pot maintenance.

This is just a sampling of "Hands-On" classes available in Dearborn. There are many more educational opportunities offered to help you increase your skill level and improve your business so if you haven't already done so, place your "Hands-On" a pencil and fill out the registration form.

— Paul Olsen, RPT
Institute Director

Rebuilding Seminar — An Outstanding Dearborn Event

The Rebuilding Seminar offers a complete seminar within the 1996 Annual Institute. This series of eight classes, given by some of the finest rebuilders and instructors that PTG has to offer, gives you a rare opportunity. Each class will be given only one time and will cover subjects ranging from estimating the job to soundboard installation. Classes will be open to all convention registrants. You can choose one or two classes or follow the complete seminar. The choice and opportunity are yours!

Offerings include *Ed Dryburgh* (Mr. Glue-All) covering the business aspects of estimates, contracts and making a profit. A highly successful rebuilder shares his ideas.

How do you fit the top of the pinblock while it is in the piano? — *Shawn Hoar*, (CT PTG) will address shop tools, jigs, and tools of the trade and answer this question. *James Reeder* (Lansing, MI PTG) will address bridge construction and duplication showing the importance matches the soundboard and belly work when restoring a piano. *Ken Hannah* (Twin Cities, MN PTG) will show his methods of dealing with piano wire—destringing and stringing. His techniques will keep your time and frustration at a low. *Andre Bolduc* shows simple and practical procedures to remove and reinstall pinblocks. Andre will also have another class explaining practical veneering, touch-up and tips and tricks for simple wood working.

In *Nick Gravagne's* class on soundboard construction, you can learn the process he and other bellymakers use to construct and install soundingboards and when replacement is necessary.

David Vanderlip (LA PTG) will cover teardown, repair procedures for soundboards and shimming techniques with hand and power tools.

This special seminar is sure to offer the established rebuilder or future rebuilder alike, practical advise. Tips and proven rebuilding systems from some of the most experienced and respected rebuilders in the United States and Canada. *Don't miss it!*

— Wally Brooks, RPT
Assistant Institute Director

PMAI Adopts Ethics Code

Manufacturers, Dealers Aim To Make Piano Buying More Enjoyable

Excerpted from Music Trades Magazine by Larry Fine, RPT

On Sunday, January 21, leading piano manufacturers and retailers convened for the signing of the Piano Manufacturers Association International's Code of Ethics. In signing the 11-part agreement, manufacturers have attempted to create an environment that will cleanse the piano industry of cutthroat sales activities and further cooperation between piano retailers, teachers, and technicians. The code is in response to numerous surveys that indicate that prospective customers are being driven away from piano dealerships because salespeople indulge in slandering competing dealers.

"The number-one obstacle we found in getting retailers, teachers, and technicians to work together to promote the piano industry was their concern about each other's ethical practices," said Robert Jones, PMAI president. "With this document, and the signing ceremony, we want to create a visual reminder that we manufacturers intend to do more than give casual lip service to this code. It's one thing to draft it and distribute it, but it's quite another to live out its intent."

(*EDITOR'S NOTE: The complete text of the PMAI Code of Ethics appears in the February issue of the* Journal. — ***S.B.***)

MSR Wins Bid to buy Mason & Hamlin

Sacramento, CA. — Music Systems Research, manufacturer of American's best selling player piano system, PianoDisc, announced recently the acquisition of the bankrupt Mason & Hamlin Piano Co. assets. The selling price was not disclosed. Approval of the acquisition was made during a hearing of the Bankruptcy Court of Worcester, Mass. The decision ended months of planning and negotiations by the Sacramento-based firm and over two years of legal battles between the previous owners and creditors. Prior to the court session, the creditor's committee had voted to approve the Music Systems Research proposal for reorganization. The court's primary reason for granting control to Music Systems Research, was its belief that the firm would be best able of all the petitioners to operate Mason & Hamlin in a profitable manner. Music Systems Research's track record in the music industry has been impressive: since production of the PianoDisc system began in 1989, sales for the firm have increased a staggering 500 percent. The company is now ranked as one of the world's top music companies by *Music Trades* magazine.

Mason & Hamlin was founded in Boston in 1854 by Henry Mason and Emmons Hamlin. For many years, Mason & Hamlin was one of the world's premier piano lines, and a strong competitor of Steinway & Sons in attracting the support of top artists around the world.

The history and prestige of Mason & Hamlin are well appreciated by Music Systems Research co-owners Kirk and Gary Burgett, who were present for the hearing. "We're pleased that the judge ruled in our favor. We were hopeful, but not at all sure of the outcome. However, we always knew that we would be able to restore Mason & Hamlin to its former position in the piano industry. We will manufacture the pianos with the same high standards that made Mason & Hamlin one of the most prestigious piano manufacturers in the world," said Gary Burgett.

Operating plans for the firm include the continued production of pianos in Mason & Hamlin's Haverhill, Mass. plant.

In addition to production of the Mason & Hamlin pianos, plans are being discussed for the Knabe, Sohmer, George Steck and Falcone piano lines (which were part of Mason & Hamlin assets). "With the recent exit of Kimball from the piano business, we have an opportunity to fill several gaps in the marketplace. In addition to pianos in the high end, we can also start manufacturing a low-end line to meet consumer demand," said Music Systems Research Executive Vice President Tom Lagomarsino. "Production of pianos to support the PianoDisc player product is another of our goals."

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Historic Sights to See in Dearborn

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and exotic cars you've never seen before—from the 1938 futuristic concept "Y-Job" car to the torpedo-nosed 1950 Buick LeSabre concept car. You will be amazed at its unique styling. The 1986 Duryea Motor Carriage which led America into the automotive age is the only one of its kind still in existence.

The Henry Ford Museum is a tribute to American ingenuity and resourcefulness, capturing everyday struggles and triumphs for future generations to appreciate.

Henry Ford Estate

Return to the world of automotive pioneer Henry Ford at the Henry Ford Estate, "Fair Lane." This was the home of Henry and Clara Ford and their son Edsel for 31 years.

The exterior of the home was built of limestone, with walnut, rosemary mahogany and oak decorating the inside. The 56-room house covers 31,770 square feet on 210 acres of land. The estate featured a swimming pool, bowling alley, music room with piano and pipe organ, seven bedrooms and 15 bathrooms.

In addition to the main house, a powerhouse was constructed on the Rouge River to provide the estate with electricity. Two water-driven turbines turned electrical generators. A 12-car garage and research lab were also located in the powerhouse.

Today the pool area has been converted to the Pool Restaurant. During the summer visitors can follow the Ford Discovery Trail, a self-guided 45-minute walking tour of the home's gardens and grounds.

Discount coupons for the Museums are available through the Auto Club of America and the Hyatt Regency Hotel Dearborn. For more information on any of these Museums call 1-800-TELL-A-FRIEND, or on the World Wide Web at http://hfm.umd.umich.edu/

See you in Dearborn in July!

— Richard Bittner, RPT,
Host Chapter Chairman

From the Visually Impaired Committee

Good news and more news! At this time, I have information for all of the visually impaired. The committee has accomplished our goals for 1996. We would like to thank all those who made it possible for these goals to be met. Make plans to go to the 1996 convention in Dearborn, Mich., because this year the entire chapter will provide us with assistance. We will receive the convention schedule on cassette by June 1996, which will help us to become more familiar and prepared for all of the classes. Encouraging friends to put forth the effort in coming to the convention can really make a difference. There will be a meeting after the opening ceremony, so plan on attending this in the provided conference room. We welcome anyone who would like to attend our meeting because everyone's opinions and ideas are always appreciated. Our outstanding instructors are anticipating our arrival and have already planned our schedules and classes for the first day. Feel free to call me at (713) 460-1146, if you have any questions or comments.

— Roy Escobar, RPT
Chairman, Visually Impaired Concerns

Industry News

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Rives Joins Dampp-Chaser

Dampp-Chaser Electronics Corp. of Hendersonville, N.C., recently announced that Karen M. Rives of Rutherfordton, N.C., had joined Dampp-Chaser as its Marketing Specialist. In addition to contributing to the promotion of the humidity control systems for pianos, Ms. Rives will be spearheading the Dampp-Chaser effort to introduce humidity control for the display and storage of stringed instruments.

Karen M. Rives

Dampp-Chaser manufactures humidity control systems for pianos, instrument display cases, closets and other confined spaces. The company's products are currently marketed in the U.S., Canada, Mexico, Central and South America, Europe, Asia and Japan.

Perfect Pitch

A Bridge Between Science and Art?

Do you possess perfect pitch or have a history of it in your family?
Do you know anyone with perfect pitch?
If you answered "yes" to any of the above questions, we would love to talk to you.
Please get in touch with us at (516) 562-1123/Fax (516)562-2866, or write to Smita Kumar c/o Peter K. Gregersen M.D., Division of Biology and Human Genetics, North Shore University Hospital/ Cornell University Medical Center, 350 Community Drive, Manhasset, New York 11030 or E-mail us at PKGG7@aol.com and help us to unlock the mystery of perfect pitch.

Thanks!

*$5 reimbursement for long distance calls

PERFECT PITCH QUESTIONNAIRE
Division of Biology and Human Genetics
North Shore University Hospital/Cornell University Medical College

Name: _____
Age: _____
Sex: _____
Race: _____
Address: _____

Phone: _____ FAX: _____ EMAIL: _____

The first part of this questionnaire is designed to determine whether you have perfect pitch and exactly what this ability means.

1. Do you have perfect pitch? _____
2. How would you define the ability of perfect pitch? _____
3. Age at which you started to play your first instrument _____
   What was that instrument? _____
4. Age at which you knew you had perfect pitch _____
5. How many notes can you hear simultaneously and still name individually? _____
6. Is there any restriction to naming notes on instruments other than your primary instrument? If yes, explain. _____
7. Can you sing notes corresponding to musical notes if you are given the letter name? _____
8. Do you have any exceptional abilities in the following areas?
   1) Math _____
   2) Spatial perception _____
   3) Sensory perception (Taste, Smell, Sight ...) _____
9. Do you have any specific sensory association with particular pitches (i.e. color, smell)? Please explain. _____
10. Have you noticed any changes in your ability with age? _____

The second part of this questionnaire is geared towards understanding the family history of perfect pitch, if it exists.

Please list the names and ages of ALL immediate family (parents, siblings, children and spouse) and indicate whether they possess perfect pitch or good relative pitch, no pitch sense, or? If you don't know. Also, please list the names of any members of your extended family who possess perfect pitch or good relative pitch. _____

Do you know anyone with perfect pitch who would be willing to participate in this study? _____
If yes, may we contact them? Please give address and telephone number. _____

Thank you for your time!

SC Region Roundup of Piano Teachers Outreach for 1995

1995 saw outreach to piano teachers in all but one of the South Central Region states. *New Mexico* hosted the MTNA Convention in Albuquerque in March prior to the PTG Institute in July there. Larry Goldsmith, Fred Sturm, RPT, along with other RPT's and Associates manned an exhibit booth financed by PTG. Larry Goldsmith presented the annual PTGA scholarship awards at the awards banquet. Fred Sturm, RPT, writes "Regular contact with the officers and with the most active and nationally known members of MTNA keep our organization visible, and make cooperative activities like SPELLS easier to accomplish."

Oklahoma RPTs Ross Trawick and Keith McGavern along with Associate Darin Niebuhr, who is also a piano teacher, had a very positive experience manning an exhibit booth, at no cost, at the OMTA Convention in Tulsa in June. They were so well received that the OMTA presented a plaque to the Oklahoma Chapter, PTG, reading "In appreciation and support of the OMTA." Ross Trawick, RPT, writes "This was a very worthwhile event for our chapter to attend as exhibitors. In visiting with some of the teachers at the convention, they expressed an interest in maybe having a class on caring for the piano to be presented at a future OMTA Convention by members of the PTG."

Arkansas did not have a MTA convention in 1995 but will have one in June, 1996. Bill Yick, RPT, will be leading Arkansas technicians to participate in appropriate capacities.

Louisiana PTG members Gerald McClesky, RPT, Dean Clark and John Zenter, Associates of the greater Shreveport area, were part of a unique event called the "*Musicarnival.*" They manned an exhibit booth, at no cost, in a carnival atmosphere which "has been especially popular with parents" since it started in 1993 according to GSMTA literature. John C. Zenter, Associate, writes "according to the festival chairman and all the teachers and parents we talked to afterwards, our booth was the smash hit of the carnival. We stayed busy the entire time answering questions about action parts, tuning, and general maintenance relating to the piano. We passed out business cards and several new customers were obtained on the spot. We have a standing invitation to participate in the *Musicarnival* each year. We intend to continue our support and expand the scope of our involvement."

Texas technicians usually man a booth each year, for a fee, at the TMTA convention but did not in 1995. The TMTA convention was held in Lubbock in June. Bob Johnson, RPT, presented three scholarship checks provided by Texas chapters and individual PTG members to winners of a piano competition. They were on three levels: College, High School and Junior High. Bob Johnson also presented a one-hour seminar on care of the piano. One concern expressed by his teacher audience was the poor quality of music education in the public schools. Regrettably, we report that the Texas State Association voted last October to totally delete it's teacher outreach program. There is enough interest, however, among Texas PTG members to sustain the program for 1996.

Usually, when the music teacher association is rather small in number of members they are glad to have PTG members to man a booth at their conventions and usually at no cost. The Music Teachers National Association in Cincinnati, Ohio can furnish the name and phone number of the local MTA President. The MTNA phone number is 513-421-1420. Any PTG chapter or group of PTG members who would like manning a booth in your area will enjoy doing it. It will give exposure for PTG and you could even profit from it with new customers as some have done. A copy of "Presenting Programs to Teachers" may be obtained from the PTG home office at no cost. It contains instructions for manning an exhibit booth as well as ideas for seminars.

— Martin Wisenbaker, RPT
SCR Member, National Teacher Relations Committee

Super Sounds on Super Bowl Weekend

Richmond's fourth annual "Longest Piano Recital" over Super Bowl weekend last January was once again a rousing success. The event was sponsored by the Piano Music Association of Richmond (PMAR), which participates in the Piano Manufacturers Association International "SPELLS" program.

Fifteen Richmond chapter PTG members and two spouses participated along with 250-300 performers, representing more than 25 RMTA piano teachers, during the two days of continuous piano solos and duets at a local County Mall. Two new grand pianos were provided by Jordan Kitt's Music and expertly tuned by RPT members Tom Cobble and Dave Campbell.

Richmond Chapter President Bruce Winn, RPT, performs at the piano while Auxiliary President Brenda Hallmark oversees the information table

Media coverage by two local TV stations included "visual shots" of the recital during their newscasts, and the local newspaper included a nice large photograph with a caption in their Sunday edition.

Events being considered for future promotions by PMAR include: presenting programs for elementary and middle school students on the benefits of piano playing; repairing pianos to equip studios for one-on-one teaching at a metropolitan middle school with special needs; working with after-school programs in area elementary schools to develop piano presentations for their students; presenting shorter recitals at other area malls; entering a piano related float in the annual Christmas parade; and continue having booths and displays at public festivals.

— Alan Hallmark, RPT

Passages

John Travis, one of the first co-presidents of PTG, with his wife, Genevieve, at the Albuquerque, N.M., PTG Convention in 1995.

John W. Travis

July 21, 1914
April 2, 1996

John William Travis, 81, one of the first co-presidents of the Piano Technicians Guild, died April 2, 1996 at Shady Grove Adventist Hospital.

A Golden Hammer Award winner and PTG Hall of Fame member, Mr. Travis was the president of the National Association of Piano Tuners when the NAPT and the American Society of Piano Technicians combined to form the Piano Technicians Guild in 1958.

A resident of Takoma Park, M.D., he had lived in the Washington area since 1942. He was a Navy World War II veteran and a native of Blackford, Ky. He graduated from Murray State University.

Before becoming self-employed in the early 1950s, he worked with Campbell Music Co., the local representative for Steinway & Sons pianos. Mr. Travis authored two books, *Let's Tune Up* and *A Guide to Restringing.*

He was a Mason, a charter member of the Choral Arts Society of Washington, sang in the choir at Calvary Baptist Church and Wallace Memorial Presbyterian Church, both in Hyattsville, and directed the choir at First Baptist Church of Hyattsville. He also wrote choral music.

Mr. Travis is survived by his wife of 52 years, Genevieve R. Travis; three sons, John William Travis Jr., Waldorf, and Michael K. Travis and Jeffrey W. Travis, both of Greenbelt; a daughter, Genevieve Wheeler, Takoma Park; a brother, Cecil Travis, Redding Calif.; a sister, Lyda White, Providence, Ky.; three grandchildren; and a great-granddaughter.

Services for Mr. Travis were held at Wallace Memorial Presbyterian Church in Hyattsville, M.D., April 5, and he was interred at Parklawn Memorial Park.

Memorials are suggested to the Piano Technicians Guild Foundation or the Wallace Memorial Deacon's Fund.

I have known John Travis for almost half a century — John was a dedicated piano technician — he lived to tune pianos.

We need more piano technicians who live, eat and love piano work as John did.

The piano technicians field will certainly miss John, whose dedication, love and devotion to the profession will be hard to copy.

To you who are piano technicians, as you go out each day to service pianos, remember John Travis' devotion, love and dedication to the profession, and it possibly could make a better technician of you.

John, we will miss you.

— Wendell E. Eaton, RPT
Washington DC Chapter

Gary Kunkle

April 25, 1936
February 6, 1996

On February 6, 1996 we lost a friend and fellow technician. Gary Kunkle passed away in his Grants Pass home on that day leaving behind his partner and "Guardian Angel" Marty Fate and two sons in Illinois and Michigan.

Gary was born in Maryland on April 25, 1936 to a Lutheran minister father and school teacher mother. He started playing piano at the age of three and by the time he reached his teens he had disassembled his first one! By the age of twenty he was tuning and playing in bands. He made music throughout the 60's and 70's and even played in an opening band for Buck Owens on a USO tour to Labrador. Gary had a rebuilding shop in Kempton, Illinois with a staff of seventeen and a business for many years in Grants Pass, Oregon. He excelled as a pianist and organist and was popular at local functions and playing for churches. He was a member of the PTG and the Rogue Valley, Oregon chapter for many years.

Gary's love of humanity and the environment, deep spirituality and quiet sense of humor will be missed and remembered by those of us who were lucky enough to have known him.

— Louise Nicholson, RPT

In Memory ...

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Calendar Of Events

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 Home Office, your event will be listed through 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.

May 10 & 11, 1996
UTAH INTERMOUNTAIN SEMINAR
Brigham Young University, Provo, UT
Contact: Vince Mrykalo
694 N. 100 E,
Provo, UT 84606
801-375-1987 or 378-3400

July 17-21, 1996
PTG CONVENTION & TECHNICAL INSTITUTE
Hyatt Regency Dearborn, Dearborn, MI
Contact: PTG Home Office
3930 Washington
Kansas City, MO 64111
816-753-7747

October 3-6, 1996
NYSCON
Rochester South Holidome, Rochester, NY
Contact: Robert Edwardsen
716-586-1360
Rochester, NY

October 25-27, 1996
NORTH CAROLINA REGIONAL CONFERENCE
Sheraton Airport Hotel, Charlotte, NC
Conference Director:
James Baker, RPT (704)366-8466
Registration Contact:
Lewis Spivey,RPT (919)937-4777
15 Rachel Drive,
Nashville, NC 27856

October 31 - November 3, 1996
TEXAS STATE ASSOCIATION CONVENTION
Inn on Lake Travis, Austin, TX
Contact: Mike Pope
512-869-4707

AUXILIARY EXCHANGE

Dedicated To Auxiliary News and Interests

More for PTGA at Dearborn

It's close to convention time! Have you registered yet? Do you have your hotel reservations yet? Time is very short, so if not, do it now while you're thinking about it. Should you be late you may not get a room in the same hotel with the rest of us, and that would make it difficult on you because the nearest hotel is too far to walk to.

On Saturday, after our Installation Breakfast I have arranged some very wonderful classes for us to attend, classes where you can learn "valuable" things. Take what you learn home with you and improve you home business or your life. These classes alone are worth the price of admission. At long last we have an Institute Director, Paul Olson, who sees that what we've been saying for years is true. It is better for both the PTG and the PTGA to have us join some of the appropriate classes with them. That's exactly what we will be doing this year. The expense of doing separate classes for us is not necessary. Furthermore, this way we get a bigger selection of meaningful classes to pick from without additional cost to the PTG. This is a win-win solution.

L. Paul Cook

Our breakfast will end in time for us to attend the second, third and fourth class sessions. During the second session we will have our choice of attending several mini-classes. There will be time to attend two mini-classes each with your choice of about five or six different business subjects, such as Finanical Planning and Setting up a Business and more. Next session you may attend a full class on "Communication for the 21st Century," which is about modern ways of communication tools and how to use them — cell phones, E-mail, faxes and much more. In our last class you will have a last opportunity to meet and listen to Henry Steinway, a direct descendent of the founder of Steinway & Sons Pianos, now in his 80s. Mr. Steinway will bring his slides and stories about the history of the Steinway Company. You may know that Steinway was purchased back in 1972 by CBS, so this indeed will be a very special opportunity to take advantage of. It may be your last chance to meet a real "Mr. Steinway."

Lastly, I noticed an error on the registration form regarding the price of the tour. If you sign up at the Hotel for the tour, it will be $10 more than if you sign up now with your registration form. So make your tour reservations now and save $10.

May Day ... May Day

Help! I am once more writing this column under the stress of a deadline. The good news for me is that this is the last publication deadline I will need to meet for the *Journal* this year.

As I chose the month of May for writing, I thought of all the well-known holidays that are celebrated this month and also the ways that the word "may" are utilized. My attempt at drawing parallels between these activities and the PTGA is as follows.

May Day ... a time to initiate and recognize friendships and the beginning of spring by giving a May Day floral basket. Surely PTGA has set as a goal "an increase in membership" that provides a support network of friendship between its members and spouse technicians. Our work with the scholarship recipients continues to bring about "floral baskets" and recognition of "springing" new talent.

Mother's Day ... the day set aside to pay tribute to motherhood and its many rolls. Certainly the officers of the PTGA board take on the characteristics of a mother by keeping traditions, saving keepsakes, fostering education of its youth, encouraging new ideas, tempering hurt feelings, corresponding with family, recording history, listening to dreams, taking calculated risks, empathizing, and ultimately modeling so that others may be ready to take on the responsibility and thus ensure that the torch is passed on to yet another generation.

Memorial Day ... the national holiday for taking time

Continued on Next Page

Pearsons On The Road

7000 miles! The three Pearsons, Walter, Helen, and Tyrrell left Florida January the 13th, arriving in Anaheim four days later. It was necessary to be at NAMM a day early to tune and prepare the Belarus and the Estonia pianos for display. While the men worked I had time to browse before the crowds came in, and down the street I discovered an Indian restaurant where the food was so delicious. We dined there twice, and intend to return there again next year. I have some Masala in my spice rack and am experimenting with Indian cuisine myself.

After NAMM, we crossed the border at Tijuana to tour the coast of the Baja Peninsula. The first stop was at the Grey Whale National Park to see the whales that migrate from the Arctic. Then from Guerrero Negro we detoured to see the famous salt flats which are among the world's largest. The natural conditions are so favorable that 8000 tons of pure salt are obtained daily for shipments to the USA, Canada, and Japan.

At Ensalada there is a side road down to La Bufadora, "Blow Hole," a large sea funnel where ocean waves crash against the rocks soaring to great heights. Spectacular!

The strangest sight on the route to La Paz was 12 miles of gigantic boulders as far as the eye could see on both sides of the highway. Most are bigger than a tour bus. I do not believe a similar sight exists anywhere else in the world.

Some stretches of the route are through vast areas of agriculture, huge expanses of tomatoes, grapes, persimmons, olives and strawberries. Then there are dry areas with forests of strange varieties of cacti.

If you consider taking the ferry at La Paz for mainland Mexico, give yourself a day to buy the tickets and drive aboard. It is an overnight trip - 7 hours. The menu looked appealing, but when the time came to eat, no one was in the dining room. Walter can tell you why.

Guadalajara was our next destination. Rooms are expensive but we found a beauty for $15. Our envious Mexican friends wanted the address.

Tyrrell loved the experience of driving in Mexico City and did so well that our Mexican friends passed him the keys of their luxurious town car, and enjoyed being chauffeured.

Xochimilco with its canals of floating gardens was very tranquil in the morning. Of course we visited pyramids. Those of Tula are not far from San Juan del Rio where friends live. With them, we went to El Centro one evening where thousands of pilgrims had arrived on buses and trucks to celebrate Mass before making a trek to San Juan de Las Lagos. There were tables for the local people to set up all sorts of food. We ate tamales, enchiladas, and drank atole — a cinnamon drink. I don't recommend it.

An afternoon was spent at a geyser where the water in the swimming pool was so hot I could not keep my feet in.

We have been going to Mexico for 23 years and have many friends there. One, Susana, age 6, has a wide vocabulary of English words. Her home work required that she fill in the blanks with "any" or "some" in such sentences as "Do you have—carrote. No, I don't have—." She is one of a class of 30 six-year-olds who are expected to complete such an assignment, I am sure the first graders across the street from me cannot do this.

By the way, Tyrrell's mileage when he gets back home to Canada will total 11,700 miles.

— Helen Pearson

Are You Out There?

I was on the phone one evening with one of my fellow Auxiliary members, discussing whether or not we should cancel the upcoming January PTG social to be held at a local restaurant. Due to the blizzard of '96 that struck the east coast, road conditions have been extremely "iffy." After making our decision, we chatted a while about other topics, one of which was the PTG *Journal*—in particular, the Auxiliary Exchange section. Both of us have noticed that we rarely read anything in that section that highlights the activities and projects of the individual Auxiliaries around the country. Are there any out there? Do you conduct meetings and make plans for local projects? If so, why aren't you submitting articles to the *Journal* to let the rest of us know what you've been up to? You never know—you might be an inspiration to some other group to start moving in a positive direction.

Our chapter, in Richmond, VA, has always been very small. We have tried to recruit more members and we've even weathered suggestions that we should throw in the towel and call it quits. We have managed to meet regularly (4 times per year) and have done our best to remember our goal of promoting piano music. Since our group is so small, our treasury has been too small to warrant a bank account of its own. Recently, when funds climbed over the $50 mark, we decided that we must put this money to good use. After contacting the president of our local music teacher's association, I discovered that they have a fund called *"The MusicLink"* which is earmarked for piano students who perhaps can't afford a lesson one month or are experiencing some type of financial hardship. I contacted our members to find out their opinion on donating to this cause. It was unanimous that this was the perfect idea for furthering the goal of piano music. Our treasurer sent the check and received such an expression of appreciation from the music teachers. We know that our gesture would be considered insignificant by many, but on the other hand, working with budding pianists is like planting a seed. You never know when or where their talents will take root and soar to heights that even they never imagined.

— Brenda Hallmark, PTGA President, Richmond, VA

May Day ... May Day

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to show honor and respect for our veterans who took on the task of protecting our American way of life. The parallel is easy here ... the past presidents who have chosen to lead us through the formative years of PTGA and those more current who have sustained us and continue to lead us. It is at this time I wish to personally salute the "captains" Belva Flaegel, Louise Strong, Ginger Bryant, Agnes Heuther, Arlene Paetow, Phyllis Tremper, and L. Paul Cook that I have been privileged to serve under as corresponding or recording secretary. Take a look at the list of published names on the *Journal* page that represent people who have given of themselves so that this organization might carry on ... The Honorary Life Members includes those who have been recognized by their peers (much like the Grammy Awards). Obviously, there is also a multitude of undecorated women and men who took on tasks assuring the existence and smooth running of PTGA. My hat is off to all of you.

Now, I conclude with what I feel is "the rest of the story." It is with fond memories that I have written this article. It has been a pleasure to serve as a National Officer these many years ... it is time to pass the torch ... "Captain, May I Be Dismissed?"

Most fondly and keep in touch,
— Judy Rose White
Corresponding Secretary

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Many other services available. Call or write for price list. FREE return freight on pre-paid orders of $75.00.
WALKER PIANO SERVICE,
554 State Route 1907, Fulton, KY 42041, 1-800-745-6819.

SIGHT-O-TUNER SERVICE: Repairs, calibration & modifications. Fast, reliable service. Richard J. Weinberger; 18818 Grandview Drive; Sun City West, AZ 85375. PH. 602-584-4116.

HELP WANTED

STEINWAY & SONS, makers of the world's finest pianos, has a staff position available in our Service Department. This position is located at our factory in Queens, New York. We are seeking an individual with broad, well rounded knowledge of pianos and piano technology. Excellent business and organizational skills are required as duties will include significant customer/dealer/technician interaction, technical education, service scheduling. Please send resume and salary requirements to:

Steinway & Sons
1 Steinway Place
Long Island City, NY 11105
Attention: Michael Anesta,
Director of Personnel
EEO/M/F/V/H

TECHNICIAN needed by Top Northwest Yamaha Acoustic/Disklavier Dealer. Full time, Monday through Friday, position that entails floor tunings, shop repairs, In-Home tunings and service calls. Income range $25K to $35K depending upon qualifications and experience. Includes excellent benefits package and possible aid in relocation. Forward resume and cover letter to:

Cascade Piano Company
4160 N.E. Sandy Blvd
Portland, OR 97212
Fax: (503) 282-5707.

PIANO TECHNICIAN with concert tuning background and expert technical skills to serve international performing artists and private customers needed by the Jacobs Music Group, Steinway's exclusive representative in the Philadelphia area. Salary plus Benefits. Applications confidential. Call or send resume to:

Jacobs Music
1718 Chestnut Street
Philadelphia, PA 19103
(215) 568-0021.

TRAINING

WELL-TEMPERED TUTOR. Learn to tune by ear with your Macintosh computer. Use pre-programmed temperaments or create your own. If you have trouble hearing beats, this program can isolate the beats for you. Score yourself with the PTG exam. Twenty-one historical temperaments also available. Demo disk available. Mark Anderson, RPT: 510-524-0390 (California). Great teaching tool!

NILES BRYANT OFFERS TWO HOME STUDY COURSES: Electronic Organ Servicing: Newly revised. Covers all makes and models — digital, analogue, LCT's, synthesizers, etc. Piano Technology: Tuning, regulating, repairing. Our 87th year! Free booklet; Write or call NILES BRYANT SCHOOL, Dept. G, Box 19700; Sacramento, CA 95819—(916) 454-4748 (24 hrs.)

BILL GARLICK SEMINARS-Upgrade your skills at intensive six day resident seminars at Bill's home. Applications are invited for upcoming seminars in tuning, grand action regulation, historic tunings, harpsichord maintenance. Tuition includes instruction and use of facilities, private bedroom (share baths), breakfast and lunch. Write or call for information. Bill Garlick, RPT, 53 Weeks St., Blue Point, NY 11715; 516-363-7364.

THE RANDY POTTER SCHOOL OF PIANO TECHNOLOGY— Home Study programs for beginning students, associate members studying to upgrade to Registered Piano Technician, and RPT's wanting to continue their education. Tuning, repairing, regulating, voicing, apprentice training, business practices. Top instructors and materials. Call or write for information: RANDY POTTER, RPT; 61592 ORION DRIVE; BEND, OR 97702; 541-382-5411. See our ad on page 3.

PIANO TUNING COURSE—July 8-July 26, 1996. Three-week hands-on instruction in Tuning, Regulating and Repairing Vertical and Grand Pianos. Instructor Arthur R. Briggs, RPT, (716)665-5699 and/or contact: Continuing Education, Edinboro University of Pennsylvania, Edinboro, PA 16444. Phone: (814)732-2671 or 1-800-526-0121.

VIDEOS

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

SUPERIOR INSTRUCTIONAL TAPES ** All videos at one price, $50 @ ** Beginning Tuning, Upright Regulation, Aural and Visual Tuning, Grand Action Rebuilding, Exploring the Accu-Tuner, Grand Action Regulation, Voicing, Pinblock Installation, A to A Temperament, Baldassin-Sanderson Temperament, Bass Tuning - 3-Ways. Superior Instructional Tapes; 4 W. Del Rio Drive; Tempe, AZ 85282; Ph. 602-966-9159.

PIANOTECHNOLOGY EDUCATIONAL MATERIALS. $49.95 each reel— *Vertical Piano Regulation*, presented by Doug Neal. Presented by Cliff Geers: Plate & Pinblock Installation Part I, Plate & Pinblock Installation Part II, *Wood Repairs, Soundboard Repair*, and Grand Hammer Replacement. Add $5 per order for shipping and handling. Questions? Call 712-277-2187. Mail orders to PTEM, 3133 Summit, Sioux City, IA 51104.

WANTED

WANTED!! DEAD OR ALIVE: "Steinway uprights and grands." Call collect, Ben Knauer, 818-343-7744.

EXPERIENCED RPT wishes to relocate to northern climate in USA or Canada. Phone/Fax 404-636-5724 for resume or write John Blick, 787-4 Houston Mill Rd. NE, Atlanta, GA 30329.

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

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

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STROBO-CONN TUNER WANTED—Small box type with one window Model ST-11. Call Paul Schneider at 805-485-1372 collect or FAX 805-983-2036.

WANTED TO BUY— Piano Tuning Business servicing Hampshire & Franklin Counties of Massachusetts and/or surrounding areas. B. Snook, RPT. 516-928-8123.

WANTED: TINY PIANOS such as the Wurlitzer Student Butterfly or other small types. Call collect: Doug Taylor, 607-895-6278. I'll pay shipping!

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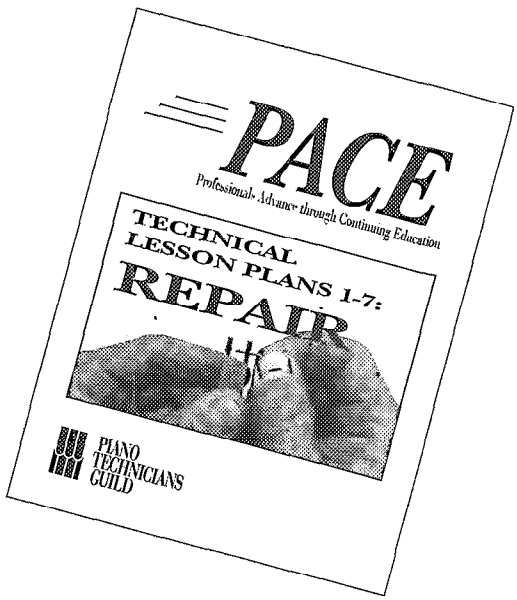

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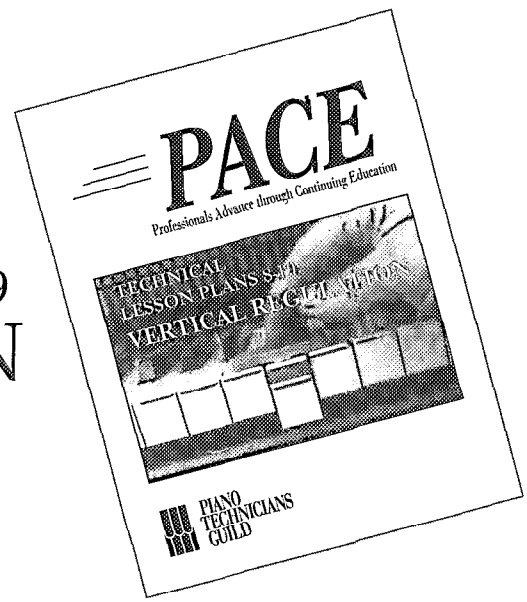

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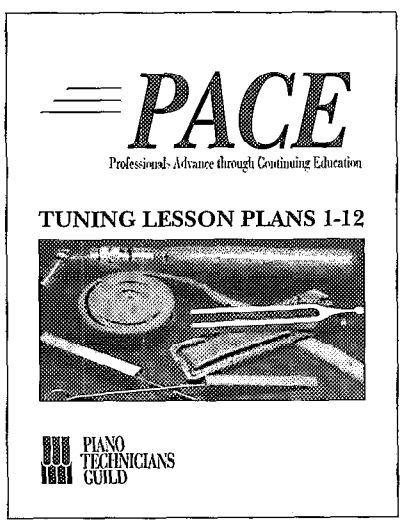

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TUNING

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PACE Lesson Plan books and Reprint Kits are all available for $15 each, plus shipping and handling from the Piano Technicians Guild Home Office, 3930 Washington, Kansas City, Mo. 64111. Or by phoning (816) 753-7747, or fax (816) 531-0070.

PianoDiscussions™

May 1996

News From The World of PianoDisc

Piano & Keyboard PD500 giveaway winner announced

Tamah Goad of Sulphur, Louisiana, has won a PianoDisc PD500 grand piano in a recent *Piano & Keyboard* magazine/ PianoDisc sponsored giveaway contest. Ms. Goad, a full-time piano teacher with more than 25 students, will add the PD500 to her in-home studio. She reports that her students are already excited by the prospect of being able to listen to and critique their playing. Ms. Goad believes that using PianoDisc's record option in this way will benefit her students at every level.

Ms. Goad also plans to use the PD500 to facilitate ensemble work among her students. Personally, she is looking forward to using her new PianoDisc piano to practice playing duets ... **alone.**

Fact: PianoDisc is America's Number One Selling Player System

1996 INSTALLATION TRAINING SCHEDULE

• June 17-22 • August 19-24
September 23-28

CONTINUING EDUCATION

• June 24-26 • August 26-28
September 30-October 2

MSR/PianoDisc

4111 North Freeway Blvd.
Sacramento, CA 95834
Phone: (916) 567-9999 • Fax: (916) 567-1941
Tech Support: 619/258-1460 or 916/567-9999

Tuition for the Installation and Continuing Education seminars is **free**, but a $50.00 refundable deposit is required for confirmation. The PianoDisc Continuing Education Series seminars are restricted to PianoDisc certified technicians in good standing. For more information about the seminars, call PianoDisc during regular business hours (Pacific Time) at 916-567-9999.

Grant Johannesen joins Artist Series

Ranked among the "truly distinguished masters of his instrument," (the *New Yorker*) gifted Steinway artist Grant Johannesen has joined the growing and very prestigious roster of artists to record for PianoDisc.

Mr. Johannesen, who recently celebrated the 50th anniversary of his debut concert, selected what could be described as an eclectic repertoire for his first disk. "I chose pieces that I thought would be appealing both to the eye and ear: things that would be fun to watch on the keyboard," Johannesen explained.

Composers represented on the disk are Faure, Ravel, Schumann, Schubert, Chopin, Stravinsky and Charles Strouse.

Dallas dealer has a winning formula for PianoDisc sales

One of PianoDisc's very first dealers, Walt Burchfield of Dallas Piano Warehouse, is also one of our most successful. We recently asked Walt and son Michael to share some of their winning sales techniques with our readers.

"The key has been to get the PianoDisc system out to people who would never walk into our piano store. We have received many calls from people who saw it on display and were very interested in purchasing one. We've also had a lot of customers who bought a piano from us years ago, come back for a system as a result of out-of-store exposure."

In the store, **"every customer who comes in ... is shown the PianoDisc system before they leave.** Even if they aren't in the market for one, they may know of someone who is."

The Burchfields also report using full-color, full-page ads in Dallas magazines, as well as radio ads. They also believe **stocking a wide selection of the music software for PianoDisc is beneficial.**

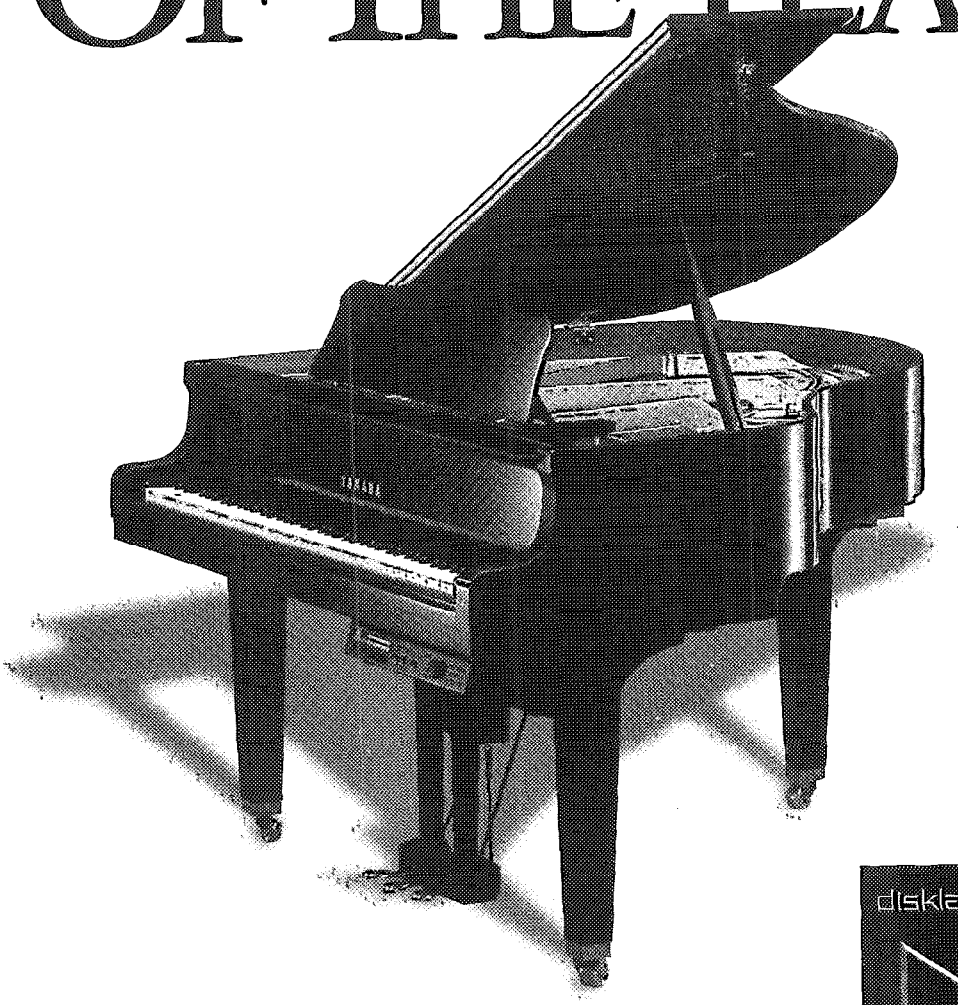
To sum it up, they stress the importance of consistent outside exposure. **"Get the systems out of your stores and put them where the people are."**

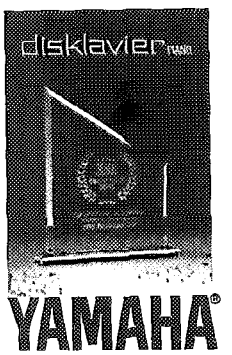
QuietTime, PianoDisc classes available at PTG '96 National Convention in July

Mark your calendar and make your reservations soon for the Piano Technicians Guild's '96 National Convention in Dearborn, Michigan. The dates are July 17-21, the place is the Hyatt Regency Dearborn. PTG officials expect the convention to be one of the biggest and best every.

We at Music Systems Research are doing what we can to insure that attendees can make the most of their time in Dearborn. We'll be offering classes that can result in increased income for the participants: two three-hour QuietTime installation/service seminars; and two three-hour PianoDisc classes on troubleshooting the system. MSR sponsored classes have always been popular with PTG conventioncers, and since space is limited, make your reservations early. For the PTG sponsored PianoDisc classes, follow your convention material instructions. For the QuietTime seminars, call us at 916-567-9999.

1994 KEYBOARD PRODUCT OF THE YEAR





Dealers have chosen the Yamaha Disklavier Piano as "Keyboard Product of the Year." It just goes to show that great craftsmanship, great technology, great dealers and great salespeople can make things happen.