PIANO TECHNICIANS
Journal
Official Publication of Piano Technicians Guild

September 1994

Vol. 37 • #9

"Whether I'm on the road with the Range, the Grateful Dead or at home in my studio, the Baldwin is my constant companion.
Its keyboard action responds equally well when creating a subtle melodic line or a strong driving rhythm."

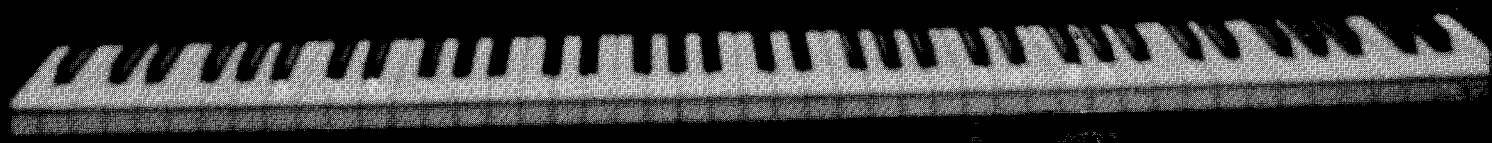
Bruce Hornsby

Photography: J.Henry Fair, NYC

As a pianist and keyboard technician for Bruce Hornsby, I have learned that I can expect great things from the Baldwin piano. As touring instruments, the pianos are moved daily, submitted to changing temperatures — indoors and out, and even danced on by Bruce. It amazes me how they take the abuse, hold their pitch and always sound great. The Baldwin piano rocks!

John "J.T." Thomas

Baldwin



Baldwin . . . *Leading the way through research.*

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Editorial Perspective

Name, Name—Whose Got The Name...?

It was only an old photograph — nobody could even tell when or where it was taken — but it certainly got a lot of people talking.

During the recent convention in Kansas City, Roger Weisensteiner, who was inducted into the PTG Hall of Fame this year and is the new President of the PTG Foundation, was touring the Foundation's Museum exhibit in the Home Office with Wally Brooks and Bruce Dornfeld. Since we began this history project, we've received quite a few old photographs, and I remarked that, although we had had some problems obtaining a current photo of Roger, we certainly had some interesting old ones.

The particular photograph I had in mind was a group shot of 16 men standing in front of a PTG banner. That meant it was taken after 1958, but from the width of the ties, the cut of the suits and the age of the subjects, it couldn't have been taken much later than that, either. A photographer's stamp on the back placed it in Minneapolis, so it might have been taken there during PTG's second convention, in 1959.

Roger was excited. "There's Kelso Davis! And Bud Corey! And — Oh, what was that guy's name!?" Before I knew it, the hunt was on back in the Exhibit Hall at the Hyatt. Roger was making the rounds, photo in hand, and the memories were flying. Ed Schadler added some names. Dave and Herb Johnson knew some others. Wilton Sykes, among others, added some more. And there was at least one good story with each name. Finally, when the dust cleared, we had a list, every name but one.

So here, for the record, are the names of the people in the photograph. From left, they are Ed Mann, John Jannigan, Sylvester Wetle, (unidentified), Wilton Sykes, Roy Trimble, Roy Neustedt, Bud Corey, Ron Achor, Roy Johnson, Al Pagano, Roger Weisensteiner, John Trimble, Kelso Davis, Joe Kulicek and Ed Schadler.

If you know the missing name, or if you can tell us anything about the circumstances in which the photo was taken, let me know.

This is only one of many photographs in the Foundation's archives. Times, tastes and faces may change, but this is our history. As you can see, the task of nailing down historical details can be exhaustive; unfortunately, the alternative is losing our past.

Larry Goldsmith

PIANO TECHNICIANS
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COVER ART

Setting let-off is this month's PACE topic as Bill Spurlock continues the technical lesson plan on Vertical Regulation. See pages 20-22 for the complete explanation and step-by-step procedures.

Photo by Bill Spurlock, RPT

The 1994 Annual Convention and Technical Institute is now history. If you were there you took advantage of a great opportunity to see many old friends and to meet new ones. Also if you were there you were able to participate in an educational opportunity that is without parallel in our profession. The class offerings were many and varied; business classes such as "The Business Plan—Your Road Map to Success," by the Service Corps of Retired Executives (SCORE); rebuilding and shop classes such as "Complete New Keys with Original or New Frame" by Joel & Priscilla Rappaport and "Not just Another Hammer Boring Class" by Glen Hart; tuning classes such as "Aural and Electronic Tuning" by Jim Coleman, Sr. and Al Sanderson and a "Master Class on Temperament Tuning" by Christine Lovegren. Other offerings included voicing and concert prep classes, in-home service and repairs, and even classes for our history buffs such as "The Techniques and Materials of Antique Piano Restoration" by Ed Swenson. From the advanced classes of soundboard installation to the hands-on classes of the *PACE* Academy the opportunity to advance your skill and your business was available to everyone in attendance.

The hands-on classes of the *PACE* Academy at this year's Institute proved to be extremely well received by everyone who participated. The learning curve and the skills achieved increase dramatically when class participants can interact with an instructor by actually doing the work at the time of the learning. Classes offered at the *PACE* Academy included many on preparing for the PTG Exams, several on basic in-home repair such as vertical hammer shank replacement and bushing and pinning skills, and several advanced classes such as bridge capping and voicing techniques. The popularity of these classes makes it appear that this new hands-on format will become a standard at our annual institute each year.

PTG President
Leon Speir, RPT

...And a Mighty Fine Time Was Had By All...

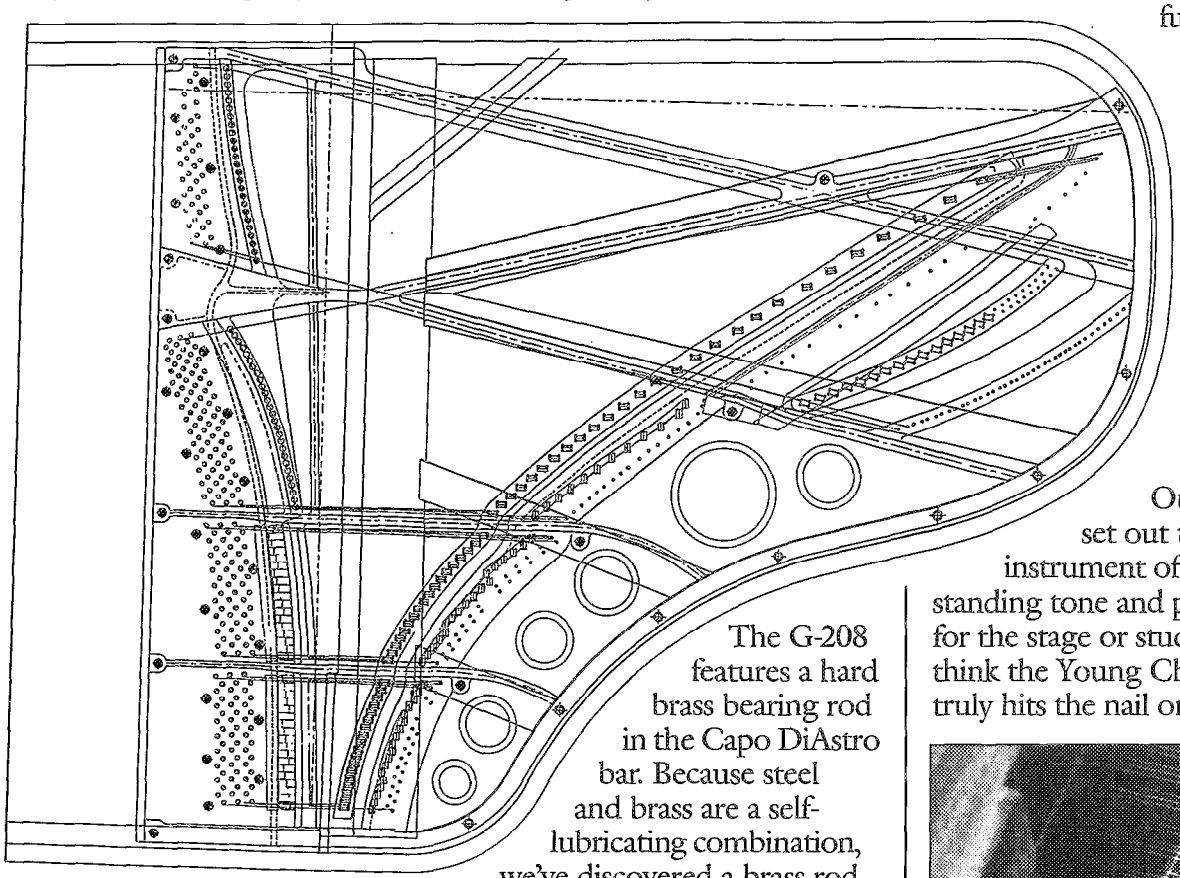
If you missed the convention this year, guess what? We are going to be doing another one next year! If you attend the 1995 convention you will have a unique opportunity to participate with technicians from around the world in a learning event. The International Association of Piano Builders and Technicians (IAPBT) will conduct their semi-annual convention in conjunction with ours. Many of the technicians from other countries who will be here to participate in the IAPBT convention will also be teaching classes at our PTG convention. You really don't want to miss this rare opportunity to learn from technicians who will present an international flavor to our institute. Also, the convention city is Albuquerque, New Mexico. If you have any doubt about the appeal of this city, just talk to someone who lives there. Our 1995 convention is shaping up to be an extraordinarily appealing convention to attend. Mark your calendars for the dates of July 19-23, 1995. You will not regret being there!

Leon Speir

A nuts and bolts guide to the new Young Chang G-208.

Our engineers are obsessed with the little things because they recognize the importance of attention to detail. But lately, they've become equally obsessed with big things, and the result is 6'10" long. Our new G-208 grand is a departure for us and represents the smallest and largest of our latest innovations.

The G-208 is a 6'10" grand piano of an entirely new scale design. It features our new "Asymmetrically Crowned" soundboard which places the highest part of the crown in each rib directly under the bridge providing maximum support under the downbearing pressure of the strings. This new soundboard design exhibits improved power, projection and tuning stability, and offers a longer soundboard lifetime. We're so pleased with this new design, we're now incorporating it into all our grand pianos.

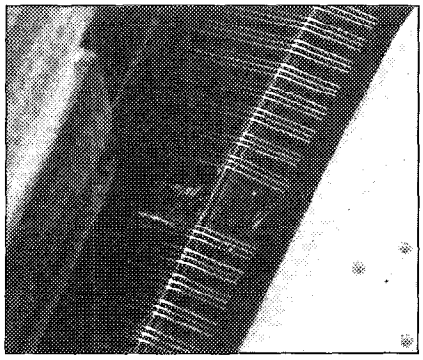


The G-208 features a hard brass bearing rod in the Capo DiAstro bar. Because steel and brass are a self-lubricating combination, we've discovered a brass rod offers better control of strings during tuning. In addition, the brass rod is easily replaced later in the life of the instrument eliminating the need for reshaping of the capo bar.

We also took a close look at our action and developed an all-new action design which improves response without loss of projection or clarity.

Our new double duplex system terminates the strings at the rear of the bridge and near the tuning pins with duplex bars. Both duplex lengths of the strings for each note are then terminated in equal length offering improved sustain, projection and clarity.

Together these innovations create an instrument with a rich, full sound, greatly improved response and a remarkable evenness of tone throughout the entire range of the keyboard. Our engineers set out to design an instrument offering outstanding tone and performance for the stage or studio. And we think the Young Chang G-208 truly hits the nail on the head.



Because strings bear against a replaceable brass rod, tuning control is improved.

For technical information on our new G-208 grand piano, write to us at Young Chang America, Inc., 13336 Alondra Blvd, Cerritos, CA 90701. Or call 310/926-3200, ext. 237.

YOUNG CHANG

The best the world has to offer.

Executive Director
Larry Goldsmith

I Wish You Had Been There...!

I wish you had been there.

In these pages, we often say that about PTG's annual convention, and it's said with complete sincerity. But when we say it, we're not just sorry that you weren't able to take advantage of all the convention-related opportunities in Kansas City last July. We're also sorry that we didn't have the pleasure of your company, and the benefit of your participation.

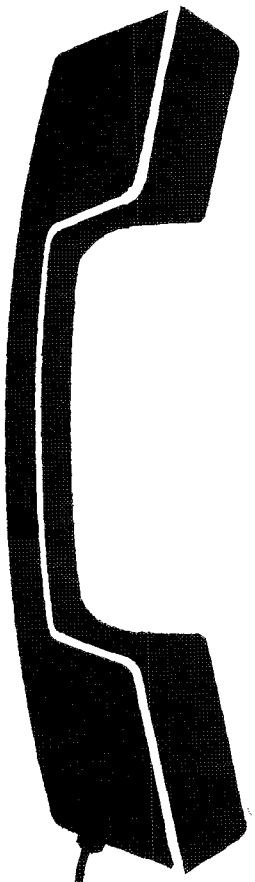
I'm sure you read the list of classes and educational offerings before the convention. Even if you couldn't attend, you're probably well aware of their benefit to you and your business. What you may not have realized is how much we'd miss you.

Things are happening in PTG. We've been gaining momentum for several years now, and some of the seeds that were sown earlier are starting to bear fruit. Here are some of the important things that happened in Kansas City. You'll get more detailed reports from your RVP and articles later in this and other issues, but from my perspective, here are some of the highlights.

- First of all, there was a new spirit in Council. Delegates received more information this year than ever before, and the informed discussion that ensued will set the course for the coming year. If your chapter didn't send a representative, however, we could have used your voice.
- We have a new Code of Ethics. Granted, it's just words on a page, but from the warm reception those words received, it's obvious that this topic is a source of concern. This Code of Ethics gives us a base on which to build. It's what we stand for.
- Several new publications made their debut at this convention, to a rousing reception. PTG's new Business Resource Manual, for example, is a how-to guide to improving the operation of your business. This valuable publication, and the reprint kits I discussed last month proved to be very popular.
- Speaking of the Business Resource Manual, plans were made to build a business seminar around it. The first one, a day-long program, will take place November 3 in High Point, NC, immediately before the North Carolina Regional Seminar. We'll spend a whole day working on improving our businesses. After this one, we plan to do more — we want to help you be successful. If you're in the Southeast Region, you'll be receiving information in the next few weeks. If not, contact me and I'll make sure you get a flyer.
- And speaking of business, we spent some time learning about our industry. I wish you could have been part of the overflow crowd that attended a panel discussion on the state of the piano industry that included PTG President Fern Henry, the National Piano Foundation's Brenda Dillon, Lloyd Meyer from Mason & Hamlin, and Jack Wyatt, Chair of PTG's Trade Relations Committee. We also saw technical representatives of most of the major manufacturers take the time to sit down and give us feedback and pages of constructive suggestions. Sure, the new-piano area is depressed now, but thanks to these people and a lot of others, there are more bright spots than there have been in a long time. You'll be able to read about the panel discussion in a coming issue, but it won't be the same. We need to get this information working in our own communities.
- Several busloads of people had a chance to see that there is indeed a Home Office. They walked through the historical exhibits produced by the PTG Foundation and saw what we do here. Selfishly, I hope they enjoyed it, because I work here and I'm proud of it. Besides, they saw my clean desk, and that's something that almost never happens.

There's a lot more, of course. Counting Council, the whole affair took six days, and we all know that a lot can happen in six days. It really was PTG at its best, and it could only have been improved if you had been there.

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



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

Now Available!
Unfinished Grand Case Parts

- Grand Lids • Lid Props
- Music Shelves • Lyre Assemblies
- Music Desks • Custom Parts

Parts are compatible with most grands.

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

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

Call 501-483-6116

TOLL FREE 1-800-876-2976

7:00 a.m. - 3:30 p.m. CST

Baldwin

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

Much Appreciated...

Thank you so much for the Member of Note Award I received at the convention in Kansas City! It was truly a pleasant surprise. After 26 years in the Guild, I still receive more than I can ever repay. Thanks again for the award, and for your friendship.

Danny L. Boone, RPT
Heart of Texas Chapter

An Emotional and Gratifying "Golden" Experience...

As the recipient of the Golden Hammer Award at the 1994 national convention, I wish to express my appreciation for this great honor. It is one of the most emotional and gratifying experiences of my life. There is no parallel to accomplishment than to be recognized by one's colleagues in this manner. By publication of this letter, I wish to thank the Awards Committee and those chapters and members who nominated me.

Traveling on the plane to Kansas City, I started thinking about the many years I have contributed to the Guild and what it was all about. For reasons unknown, I put it on paper. It expresses my feelings better than the spoken word.

"Always have an objective in life, whether it be social, economic or artistic. When you have given your best, and perhaps have achieved your goal, step aside gracefully and be willing to share some of your success with others. Then repeat the process. It is the essence of the human experience."

Most Cordially,
Norman H. Neblett, RPT

The "Moor?" Isn't a harpsichord either, Mr. Huether...

Whether or not the instrument pictured on page 57 of the April issue of the Journal is a Moor piano, it isn't a harpsichord as Charlie Huether tries to suggest.

1. It has a composite metal plate—useless in harpsichords

2. It has no jack rail. Instead it has a curving, exposed gap such as that of a piano.

3. It has a rather modern looking set of piano-ish overdampers.

As to it being an early piano, again, that composite plate puts the instrument way too late for a five octave compass, and I'm not aware of any double- manual early pianos. The complexity of the action would be mind-boggling for the state of the art in the five-octave era.

What I find confusing here is the presence of harpsichord features:

1. The soundboard rose—if it's real and not painted on.

2. The FF to f''' five octave compass.

3. The harpsichord-like hitchpin rails.

4. The harpsichord-type case construction, with joints at both ends of the bentside and a separate tailpiece.

These features are anachronistic for the 1920s. So if it ain't a Moor, does anyone out there really know what it is?

Israel Stein, RPT
Boston Chapter

Here's To The New Look...

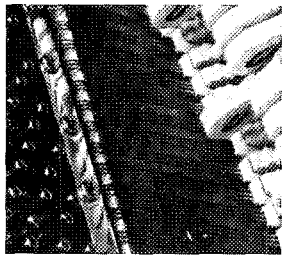
I wish to congratulate President Fern Henry for the changes in the format of the Journal which took place during her tenure. I especially like the Q&A and Tips, Tools & Techniques sections, and the *PACE* program. My feeling is that the Journal has turned in to a more positive, interesting and informative magazine under her leadership.

Jerry Raz
San Francisco Chapter

SOUND THINKING

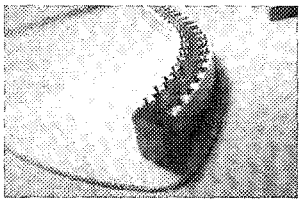
IT'S THE FIRST THING THAT GOES INTO A WURLITZER PIANO.

EVERY TIME WE SELECT A MATERIAL OR IMPROVE A MECHANISM FOR ANY ONE OF OUR INSTRUMENTS, WE THINK ABOUT THE SOUND.



THAT'S WHY OUR PIANOS HAVE A GRAND PIANO STYLE PIN BLOCK. SO OUR HIGH-FIDELITY SOUND BOARDS ARE LARGER, DELIVERING ACCURATE, FULL-RANGE TONE. AND OUR BASS STRINGS ARE LONGER, FOR RICHER, FULLER REASONANCE.

ALL SOUND DECISIONS. THE KIND CRAFTSMEN LIKE YOU UNDERSTAND AND APPRECIATE.



PUTTING THE SOUND FIRST IS A TRADITION WE'VE HONORED FOR OVER 135 YEARS. IN FACT, THE REASON THE "T" IN OUR NAME STANDS OUT IS TO REMIND US EVERY DAY JUST HOW IMPORTANT TONE IS.

BUT DON'T TAKE OUR WORD FOR IT. LISTEN. THE SOUND THINKING THAT GOES INTO EVERY WURLITZER SPEAKS FOR ITSELF.

WURLITZER

YOU SHOULD HEAR US NOW.

422 Wards Corner Road, Loveland, OH 45140

Q — How can I extract a broken bridge pin?

I've been having a problem with one unison continually going out of tune on a grand piano I service. After inspection, I discovered that one bridge pin in the problem unison is broken off about 1/8" below the surface of the bridge and is shifting sideways. This is the left pin on the speaking length side of the bridge. How can I extract the broken off piece so I can replace the pin?

Margie Williams, RPT
Richmond, CA

A — From Bill Spurlock

Bill Spurlock is a Registered Piano Technician and the owner of Spurlock Specialty Tools in Vacaville, California.

I suggest using a "screw and nail extractor." This tool is a hollow tube with saw teeth on the ends, like a tiny hole saw. It is used to drill down around a broken screw or nail shank, in order to remove the broken piece and the wood surrounding it. The hole can then be plugged and a new bridge pin hole drilled and pinned.

For this job, use the smallest one available (usually 1/4" outside diameter.) this will allow you to drill down over the broken piece without damaging the middle pin of the unison. The only tricky part is starting the hole—to prevent the extractor from walking around, first hold it in position and tap it with a mallet while rotating it slightly by hand. This will start the cut. Check one of the other pins for length, and mark the depth you want to drill on the extractor. Then, secure the extractor in your drill chuck and begin drilling, keeping the angle parallel to the other pins of that row. When you reach the indicated depth, the broken pin and surrounding wood will probably break loose and come out with the tool. If not, pry sideways on the "plug" with a small screwdriver to break it off, and remove with tweezers.

Next, plug the hole. Ideally, you would use a hard maple plug with grain direction matching that of the surrounding bridge. However, a 1/4" plug cutter is hard to find, and thin plugs can be difficult to install without breaking. A very adequate job can be done in this case by plugging the hole with a 1/4" maple dowel, drilling the new bridge pin hole, trimming and notching the top of the dowel, then applying thin CA glue to the top of the plug. The glue will lock the dowel in place, and will penetrate the end grain and harden it. Swab the hole with CA glue as well, and install the pin.

Q — How long does the regulation last?

I purchased this old upright piano thinking I would fix it up to sell it. I put on a new set of plastic key tops and refinished the wood sharps. Then I filed the hammers and replaced all of the felt and buckskin in the action. I regulated the piano as well as I could, and then I proceeded to tune the piano. It was almost a 1/2 step flat, so I raised up the pitch and then tuned it several times to get it to hold. When I was finished with these tunings, I then played for several hours. When I was done, I checked the regulation again, and it needed more regulation! Probably the worst were the capstans—I had to adjust all the capstans. My question is: Is this normal? Does the regulation change that much very often? Here is what I assume: I assume that because I had put new felts on the action and keybed, the felts all compacted and thus the regulation changed. I took a tour of the Baldwin factory and saw the machines they use that pound the pianos for an hour or two. Could you address this question for me please?

A — From Bill Spurlock

New action felt and leather will always settle to some degree, affecting the regulation. As you experienced, this settling occurs most quickly during the initial playing after felt replacement. However, there are several things you can do to reduce this problem and improve the overall quality of the parts replacement job.

First, use the appropriate type of felt or action cloth for the part. Capstan cushions on the bottoms of wippens should be firm, woven cloth. Order a range of the correct thickness of material—match the original using a dial

micrometer (these have a spring-loaded plunger for consistent readings of soft materials). Or, a good low-budget method is to pile up ten pieces each of the original and new materials and compare the heights of the piles; any difference in material thickness will be multiplied and easy to see.

Second, glue new cloth on properly. A common mistake is to glue wippen cushions on loosely, without clamping. Properly done, the cloth should be stretched snug and glued securely—not just stuck by the outer fuzz on this cloth, so if not stretched snug it will shift and settle. Keyframe backrail cloth should always be clamped until the glue sets so it will lay down flat. The same goes for other felts and leathers in the action that are subject to high loads.

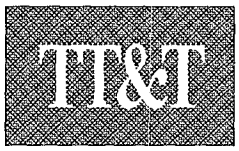
Third, anticipate some settling and regulate accordingly, then re-regulate after pounding in a couple of good tunings or some playing. Follow up with a regulation touch-up after a couple of months or so.

DO YOU THINK OF QUESTIONS WHILE YOU ARE OUT TUNING?

Write them down & send them in!

We'll take them by mail, by fax or by phone...whatever way...we'll just take them.

SEND YOUR QUESTIONS TO: PTG, 3930 Washington, Kansas City, MO 64111-2963
Phone: 816-753-7747 • Fax: 816-531-0070



A Quick Fix For Dead Bass Strings

One very common cause of unevenness of tone in older pianos is the syndrome of thumpy, dead, old bass strings coupled with a strident tenor and treble section.

A quick way to ease this cacophony is to liven up the bass strings with this proven method. Take the tension off a bass string and pound on it from the key as hard as possible. This shakes loose years of buildup of dirt and crud in the copper or iron winding that is choking the string. Repeat on each string 2 or 3 times. (I usually develop a blister on my thumb from this operation, but it's worth it).

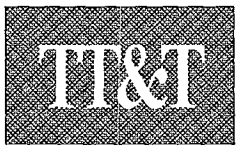
I've found this to work about 85% of the time. Sometimes the strings are just too far gone, but much of the time the improvement is remarkable and the customer is always grateful.

Iron wound strings are not quite as responsive as copper but I have had very good luck with them, too. The order I follow is:

1. Let the tension off about 1/4 turn on the pin
2. Strike about 7 or 8 hard blows
3. Restore to pitch
4. Let tension off again
5. Strike hard blows again
6. Restore back to pitch and see if tone has improved
7. Repeat if needed (2 or 3 times around is usually enough)

After this is completed, I try to match the two other sections to the bass by hammer shaping and voicing. This usually restores some balance and symmetry to the tone.

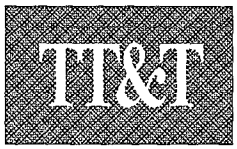
Susan Willanger



A Back Saver and More

I just had to pass along how delighted I am with my latest toy—a portable grand action dolly. It not only saves my back from lifting grand actions, but it also serves as a perfect mobile worktable for on-site regulation and voicing. No more balancing the action in my lap while I try to peer around hammer #1 to set the jack position.

Evelyn Smith, RPT
Central N.C. Chapter



Removing and Replacing a Whole Set of Straps

When disconnecting a whole set of straps, begin at the left end of the action and proceed to the right. This procedure ensures that the fallen wippens will be out of your way (for right handers). When reconnecting a whole set of straps, begin at the right end and proceed to your left. You lefties would reverse these directions.

For straps that are excessively tight or even rusted to a wire, a drop of PROTEK can ease their removal. Sometimes using flat nose or chain pliers on the tabs will facilitate tape removal. However, if the tapes tear during removal, installing new straps is in order.

To forestall removal and replacement of bridle straps it is sometimes feasible to resize the strap hole. This can be done by putting a drop of SOBO glue in the hole on the cloth side of the tab. Let the glue dry and repierce the hole with a bushing reamer or burnisher. Though reconnecting the strap is sometimes tedious and difficult after resizing, the tighter hole will lessen any rattle between the wire and the tape. In addition, any sliding of the strap to an inappropriate spot on the bridle wire without a hook stop will be prevented This is particularly helpful on Baldwin bridle wires, which only have a notch to hold the tape at the correct point. It is a well known fact that a strap not located correctly will cause the key mechanism to malfunction.

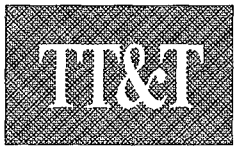
Gene Martin

Diamonds Are a Tuner's Good Friend at Least

Let me confess first to being a former devotee of oil stone sharpening who has thrown tradition to the wind and adopted the use of cleaner, less toxic, water-compatible sharpeners. In fact, I've gone one step further and now incorporate into my sharpening regimen the use of a diamond-impregnated "flat stone" also compatible with water. The advantage of using this "stone" (it really is a 1/4" x 3" x 6" piece of plate steel impregnated with industrial diamonds on one side) is that the abrasive material is very hard and —because of its mounting to a flat and hard piece of steel—provides a cutting surface that stays flat. In addition to this obviously important quality, its performance is really remarkable. I find it to remove material easily as fast as a coarse oil stone and yet it leaves a surface on the blade being cut with a polish similar to that left by a medium grit oil stone. I go from my diamond stone immediately to my 6000 grit polishing stone, obviously saving lots of time.

The diamond stone I have I got from Bob Marinelli at Pianotek. He ordered it special for me from one of his suppliers. It is made by EZE-LAP Diamond Products, Box 2229, Westminster, CA 92683, 714-847-1555. They also make other diamond impregnated sharpening tools.

Ken Sloane



Careful Work in the Beginning Helps Ensure Solid Tunings.

When you are tuning, never move a tuning pin until you know which way to move it and why.

At the very least you should know whether the string you are tuning is too sharp or too flat and how the change you are planning will affect the other intervals. Use tuning checks and tests to determine which way and how far you need to move the string. Tune the note, settle the string and tuning pin, and then test and check again to see that you got it right.

Practice until you understand intervals and tuning tests. This kind of careful work from the beginning will lead to reliable, solid, professional tunings.

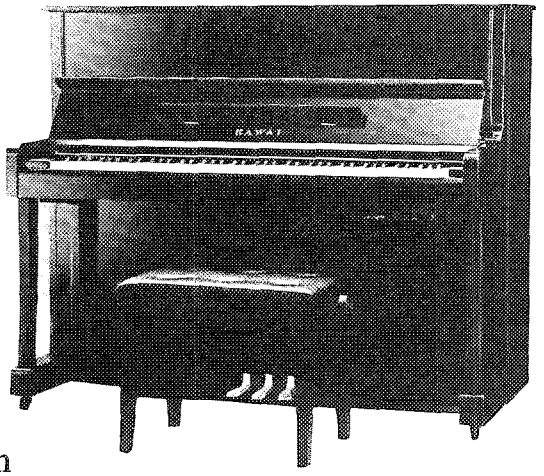
Jesse Williams

Share Your Tips, Tools & Techniques!

Send us your ideas. Tricks of the trade are often hard to come by—yet save time and energy when dealing with unusual problems or situations. Tips, Tools & Techniques offers everyone a chance to find new ideas or solutions to everyday needs. Send your ideas to: PT *Journal*/Managing Editor, 3930 Washington Kansas City, MO 64111-2963, FAX 816-531-0070

KAWAI PRODUCT NEWS

THE AnyTime PIANO



Responding to the ever-changing needs of the modern musician, the AT-170 AnyTime Piano is a unique combination of acoustic upright piano, personal practice tool, MIDI control device, and MIDI piano sound module . . . all in one. It's the Acoustic/Digital piano for '90s life-style.

For Standard Performance

The AnyTime Piano is built to meet the same exacting quality standards demanded of all Kawai acoustic pianos. In normal playing mode, it offers the exceptional tone and touch that you would expect from a Kawai upright piano.

For AnyTime Practice

In "AnyTime" mode, the AT-170 operates silently. Its unique action lets you easily mute the acoustic sound of the piano strings. Your touch on the keyboard controls the internal digital sound generator, allowing you to hear your playing through headphones. True to its name, the AnyTime Piano lets you practice, multi-piano class room teaching . . . or whenever you want to practice in private, the AT-170 is the perfect solution -- combining the touch and feel of an acoustic piano with the "AnyTime" Practice capability of a digital instrument.

For MIDI Uses

To offer more ways to enjoy the Anytime Piano, the AT-170 includes a digital sound genterator which allows you to play other internal sounds, Harpsichord and Vibraphone. Additionally, the AT-170's MIDI terminals let you connect to any external MIDI sounf device (such as Kawai's K11 Synthesizer or GMega Sound Module). In this situation, the AT-170 becomes a unique 88-note MIDI controller with real acoustic piano touch. The keyboard action incorporates a "photo sensor" system to detect and send velocity information. The MIDI control unit comes complete with Audio In/Out as well as MIDI In/Out/Thru jacks.

Specifications

AT-170 Vertical Piano (Ebony Polish)
Height: 45"
Pedal: Loud, Soft, Practice (Acoustic)
Loud, Soft
Tone Generator: 32-note polyphony, PCM
Tone: Piano, Harpsicord, Vibraphone
Others: Tone Spreader (Acoustic)
Reverb, Tune control, 2 headphone jacks,
MIDI/IN/OUT/THRU, LINE IN/OUT

Kawai America Corporation
2055 E. University Drive
Compton, CA 90220

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LESSON PLAN

Technical Lesson #13

Vertical Regulation—Setting Let-Off

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 cover adjustment of let-off, that very critical phase of the action cycle in which the jack disengages from the hammer butt just before the hammer strikes the strings. Participants will observe the effect of improper let-off adjustment on action performance, and will learn a very efficient method for making this adjustment.

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 direct blow vertical pianos in good condition. Used pianos in a dealership or practice room pianos at a college are good candidates, as long as they have only light wear. New pianos in a dealership are ideal, since let-off adjustment can almost always be refined, and doing so will not disturb other action adjustments.

Depending upon time available, this lesson may consist of each participant adjusting let-off on one or two octaves or an entire piano.

Additionally, meeting setup should include:
- Extra regulating tools
- Extra 5/8" x 5/8" x 10" pieces of wood
- Extra tuning mutes

Estimated lesson time:

One hour

Tools & materials participants must bring

For this lesson, participants should obtain the following tools:
- selection of regulating tools
- special let-off tool as shown in photo 1 (some sources are: APSCO #16124B, Ford Piano Supply #43-8, Pianotek #MLR-1, and Pacific Piano Supply #10 14M)
- 5/8" x 5/8" x 10" piece of wood
- Tuning mutes
- 5/32" lid hinge pin or equivalent (for let-off gauge)

Assigned prior reading for participants

PTG Technical Exam Source Book (PTG Home Office, 816-753-7747), pages I.9 & I.10; III.7

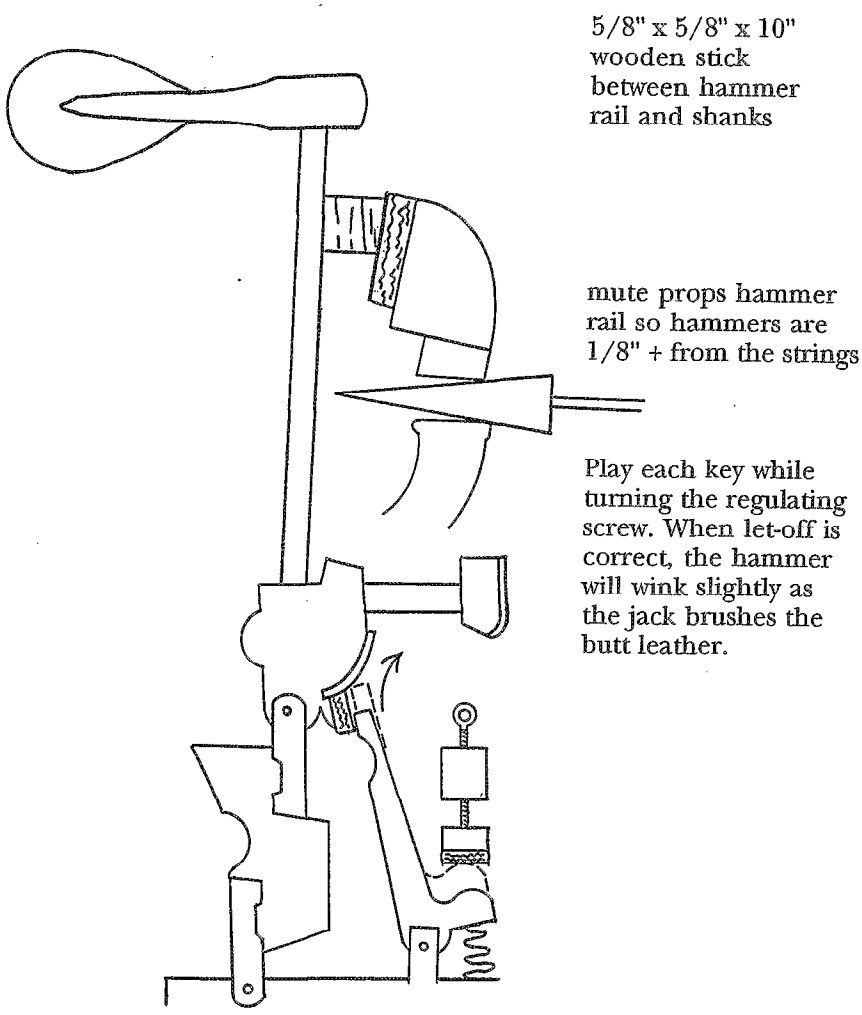
General instructions

Let-off is that point in the action cycle in which the jack disengages from the hammer butt, tripping out of the way so the hammer can rebound back to the checking position after striking the strings. Accurate, uniform let-off adjustment is critical to good action performance. If let-off occurs too far from the strings, power is reduced since the jack disengages early, wasting part of its power stroke. On the other hand, if let-off is set too close the jack may not escape fully from under the butt, especially on a soft or hesitant blow when the key may not be fully depressed. This can cause the hammer to "block" or bobble against the string, instead of rebounding freely back into check. And if let-off is erratic from note to note, evenness of touch is lost, especially during soft playing.

One common method of setting let-off is to place a strip of material—equal in thickness to the desired let-off—against the strings as a gauge. Each key is played slowly while watching and feeling for the hammer to bump the gauge. This method will work if done carefully, but may indicate a different result compared to playing the note without the gauge in place.

Here I will present a method of setting let-off that I feel is much more accurate, faster, and easier. See figure 1. To use this method, a wooden stick is placed between the hammer rail and a group of shanks. Next, a tuning mute is inserted between a nearby action bracket and the hammer rail, propping the rail up until the group of hammers is supported 1/8"+ from the strings (slightly farther from the strings than the desired let-off position). Now let-off can be easily checked as follows: place your adjusting tool on a let-off screw and play the key at normal soft playing speed. As the wippen rises, the jack will trip, bumping the hammer butt if let-off is less than 1/8" from the string, and not touching the butt at all if let-off is much greater than 1/8." You will know whether the let-off is correct, too close or too wide immediately upon playing the key, via an instant audible and visual signal. If let-off is less than 1/8," the hammer (resting 1/8"+ from the strings) will jump noticeably toward the strings, and the shank will click against the wooden stick as it falls back. If let-off is correct (1/8"), you will see only a slight wink and hear a faint click. And if the let-off is too wide, the jack will trip without contacting the butt at all, so the hammer will not move at all.

This method is extremely fast and simple because the adjustment can be done while repeatedly playing the key at normal soft playing speed, turning the screw in small increments until the hammer barely winks. It is also very accurate. Since the hammer is not forced against a gauge, you observe the actual let-off position, rather than the interference of the hammer with a gauge.



Let-off Dimensions

I have used 1/8" as a generic let-off setting in the above discussion. This matches most manufacturers' specifications, although some will recommend tapering the let-off slightly closer in the treble. Consult manufacturers' service manuals and the PTG Piano Action Handbook for specific recommendations.

Note: While let-off should be as close as is practically possible to maximize power and control, it must be wide enough to prevent bobbling or blocking hammers under all playing conditions. Vertical pianos generally require a wider let-off setting than grands to play reliably. Let-off closer than 1/8" on verticals will often cause problems, and some small, inexpensive models may require wider let-off to prevent hammers from blocking on a hard blow.

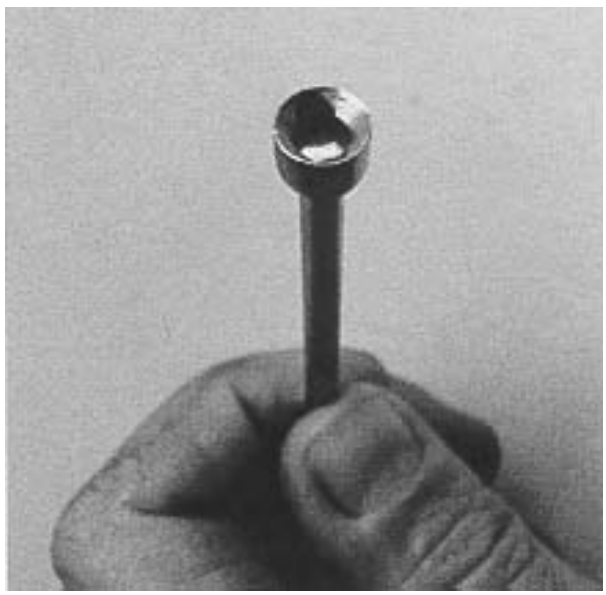


Photo 1: This photo shows the socket-type end of the special let-off regulating tool which allows it to operate at an angle to the screw without stressing and breaking the screw. See sources under tool list.

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LESSON PLAN

Photo 2: Here the wooden stick is sitting between the hammershanks and hammer rest rail felt in the tenor section. A rubber mute has been used to hold the rail forward so the hammers in the section being adjusted are sitting about 5/32" from the strings. Check this distance using the 5/32" hinge pin as a gauge.

Notice that having the hammer rail propped forward allows easier access to the let-off screws with the regulating tool. Each key in the section is played repeatedly at normal soft playing speed and the screw adjusted until the hammer winks slightly, and the shank clicks faintly against the wooden stick. The special let-off tool can be angled to one side, allowing adjustment without interfering with the backcheck and catcher.

The wooden stick serves three functions: First, most hammer rails cannot be pushed far enough toward the strings to position the hammers at let-off distance without the stick in place. Second, the wood gives an audible signal as the shank winks and falls back against it. Third, the gap between the hammers and strings in the section can be tapered (or made uniform if it is not even from end to end) by angling one end up or down. The stick stays in place by itself due to the friction of the hammer rail cloth and the pressure of the shanks.

Exercises

Each participant should practice setting let-off on at least one octave. Then, to observe the importance of correct let-off, each should try the following experiment: play two neighboring notes having correct let-off with varying force, from very soft to loud. Also note the jack escapement distance on the two notes. Then increase the let-off distance on one to about 3/8" and compare the two again. There should be a noticeable loss of volume and a reduction in brightness in the note with the increased let-off. This difference will be especially noticeable by playing a four note arpeggio with the test note being the first or last of the four. Then transpose one note and compare an arpeggio having correct let-off on all four notes.

Observe the greater jack escapement of the note with the wider let-off. Since its let-off button is lower, it encounters the jack sooner in the wippen's travel and therefore trips it farther away from the hammer butt.

*Thanks to Laroy Edwards of Yamaha Corporation for sharing this method. It has improved accuracy and saved time for countless technicians.

In brief

This lesson is the third and last of several in which we will be tuning just or pure fifths and fourths. The goal of this lesson is to give participants ear-training practice in tuning just and tempered intervals while setting a useful temperament using the circle of fifths and fourths pattern. In this lesson, participants will tune a temperament from A3-A4, applying simple guidelines for tuning fifths and fourths, in which half are just and the other half are about twice as tempered as in equal temperament. Participants will practice using the M6-M10 test for fifths and the M3-M6 test for fourths on both tempered and just intervals, and will gain greater familiarity with the circle of fifths and fourths pattern. Also, instead of a temperament strip, participants will use a pair of mutes, and will tune unisons of their assigned notes. This will illuminate the subtle differences between single string tuning and unison tuning, and should demonstrate the necessity of listening to intervals of unisons, and not single strings only, as a final temperament test.

Compared to equal temperament, in which we temper all the notes, the well temperament of this lesson should be easier for beginning tuners to accomplish. In addition, as Steve Fairchild pointed out in his 10/82 *Journal* article (assigned reading, below), this type of tuning can often help make small pianos with high inharmonicity sound more acceptable than if they are tuned in equal temperament.

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LESSON PLAN

Tuning Lesson #13

Tuning Just Fifths & Fourths—Part 3

A Circle of Fifths Well Temperament

By Michael Travis, RPT
Washington, D.C. Chapter

This monthly lesson plan series is designed to provide supervised practice of tuning skills as a supplement to independent study and practice. Chapters are encouraged to use this material as the basis for special Associate meetings, or for their regular meeting program. Each lesson is designed to take about one hour, with about four participants. Participants are assumed to have essential reference materials and tuning tools (see PACE checklist) and access to a well-scaled large upright or grand piano for independent practice

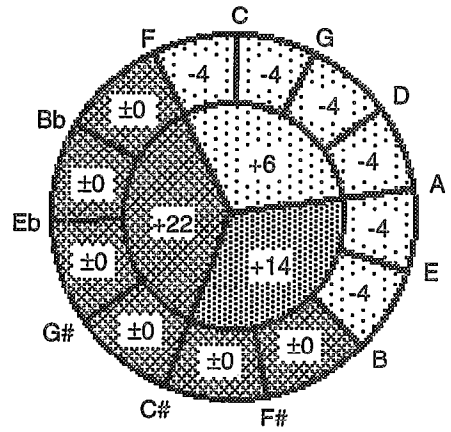
We will use essentially the same circle of fifths and fourths pattern for this lesson as in PACE tuning lesson #11 (7/94), where we learned that tuning the circle with just intervals has serious acoustic consequences. For example, we discovered the ditonic comma, the 24¢ gap between the last fifth in Pythagorean tuning and the octave – not an error, but a consequence. Our conclusion was that to produce more musically acceptable results, we would have to do some tempering, or deliberate mis-tuning of some of our just intervals. The syntonic comma is another consequence of just tuning we could have looked at. The first and last notes of a justly-tuned chain, up-a-fifth, down-a-fourth, up-a-fifth, down-a-fourth, comprise a major third that is one syntonic comma (about 22¢) wider than just. This type of third is also known as a ditone, or Pythagorean third, and has a rather harsh sound. Following lesson #11's instructions, we produced a number of these ditones. You may want to try this mini-Pythagorean tuning on your practice piano, and check out the ditone.

For other features of Pythagorean tuning, as well as an analysis of various temperaments using the circle of fifths, see Michael Kimbell's excellent 5/94 *Journal* article in the assigned reading, below, and experiment on your home piano. Briefly, in order to avoid having some very unpleasant-sounding intervals in our tuning, we must narrow some fifths and widen some fourths.

In the history of keyboard instrument tuning many systems were created to accomplish this. Our equal temperament minimizes intervallic unpleasantness at the cost of all key signatures sounding identical except for pitch. Earlier systems, notably (but not exclusively) the "well" temperaments, were also successful at eliminating wolf intervals, but without losing the effects of modulation from the mellower key signatures (fewer sharps or flats) to the more brilliant (more sharps or flats).

This lesson focuses on one such system, which Owen Jorgensen refers to as Steve Fairchild's revival of the theoretically correct Vallotti well temperament (see assigned reading in Jorgensen, below, p. 179). Fairchild calls it simply "altered equal" temperament, and presents it as three rules for tuning fifths and fourths, along with calculated theoretical interval widths (neglecting inharmonicity) in cents and beats.

We will use these rules in this lesson to tune a circle of fifths and fourths temperament from A3-A4. The result should be an approximation to the Vallotti well temperament, as Jorgensen and Kimbell describe. Looking at the example 5 circle diagram from Michael Kimbell's article, we will first set pitch at A4, tune down an octave to A3, and then tune around the circle clockwise from that point.



Vallotti's well temperament

Vallotti's well temperament, illustrated here, represents a middle-of-the-road eighteenth-century tuning which can be acceptable today in certain circumstances. Half of the fourths and fifths are beatless, the other half beat at double the "normal" rate. (This is actually quite acceptable in many pianos.) The thirds range from +6 to +22 cents from beatless, and it is the "Pythagorean thirds" at +22 which may be objectionable. If we lessen the difference between the fifths, however—let us say - 1 instead of zero for the "black note" fifths and - 3 instead of -4 for the "white note" fifths—the deviation of thirds from the "normal" +14 becomes much less: +10 for the slowest "white note" thirds and +18 for those thirds which tend to be used less often (or are used for special effect in classical music). This is the sort of temperament which a piano should receive if it is not going to be tuned in something very close to the ideal equal temperament. For instance, a reasonable approximation of Vallotti's temperament would be suitable in cases of time constraint or if the condition of the instrument is poor. I hasten to add the *best* reasons for using a carefully set well temperament: the special wishes and tastes of the player and the stylistic range of music to be played, particularly if an antique instrument or reproduction is to be used.

This excerpt was taken from the May, 1994 issue of the Piano Technicians Journal article written by Michael Kimbell entitled "The Magic Circle of Fifths." See complete article on pages 34-38 of that issue.

Fairchild's rules: first, the beat speed of any fifth or fourth in which one or both notes are black keys will be set to zero. Second, fourths whose notes are both white keys will be set to about 2 bps wide. Third, fifths whose notes are both white keys may vary in speed but should be about 1 bps narrow.

Tuning a Circle of Fifths Well Temperament

In the following instructions, ">" means "beats faster than"; "<" means "beats slower than;" "=" means "beats the same speed as"; and "~" means "approximately." At each step, tune stable unisons and recheck test intervals. All fifths are 3:2, fourths are 4:3. Focus on appropriate coincident partial levels to estimate beat rates, as exemplified in step 3.

A metronome set to 120 MM will give you the beat rate of the tempered fourths, while a setting of 60 MM will give you a target rate for the tempered fifths. Use the metronome to estimate beat rates of major thirds as follows: set the pulse equal to four beats (like four sixteenth notes) and multiply the setting by four over sixty to get bps. Review PACE Tuning Lesson #12 for other metronome beat-rate measurement techniques. Optional: list the thirds and sixths in order of ascending beat rates. Octave tune the piano and listen to music played in various key signatures.

1. Set pitch of the A4 fundamental to A440. Test with wide M17 (F2-A4 = F2-A440).
2. Tune A3 to A4, as a slightly wide 4:2 octave. Check with M3-M10 test: wide M3 (F3-A3) < M10 (F3-A4) by ~1/2 bps. The octave must sound clean and solid when you play both notes together.
3. Tune up a fifth from A3 to E4. Flatten E4 from just to ~1 bps narrow with A3 (at E5 level), and 2 bps wide with A4 (at E6 level). M6-M10 test for A3-E4 fifth: M6 > M10 by ~1 bps (at E5 level). M3-M6 test for E4-A4 fourth: M3 < M6 by 2 bps (at E6 level).
4. Tune down a fourth from E4 to B3. Flatten B3 from just to 2 bps wide. Contiguous fourths test: B3-E4 = E4-A4.
5. Tune up a fifth from B3 to F#4. Tune just. M6-M10 test: M6=M10.
6. Tune down a fourth from F#4 to C#4. Tune just. M3-M6 test: M3=M6.
7. Tune up a fifth from C#4 to G#4. Tune just.
8. Tune down a fourth from G#4 to D#4. Tune just.
9. Tune down a fourth from D#4 to A#3. Tune just.
10. Tune up a fifth from A#3 to F4. Tune just.
11. Tune down a fourth from F4 to C4, 2 bps wide.
12. Tune up a fifth from C4 to G4, ~1 bps narrow.
13. Tune down a fourth from G4 to D4, 2 bps wide. Compare contiguous fourths: A3-D4 = D4-G4. Check fifth D4 to A4; should be ~1 bps narrow.
14. Recheck all intervals.

Chapter meeting set-up

These lessons are most conveniently taught to a small group of four or five. Each group should have its own piano and RPT instructor. Each piano should be in a quiet environment for close listening. Avoid using pianos that present serious obstacles to tuning, such as deeply grooved or misaligned hammers, string termination noises, etc.

The piano for this lesson should be at least pitch-adjusted to A440; "master tuning" is not necessary.

Tools & materials participants must bring

Tuning hammer, A440 pitch source, and mutes. Instructor should bring a metronome to help judge beat speeds.

Home study assignment for participants

Read "Steve Fairchild's Altered Equal Temperament for Small Pianos," by Steve Fairchild, RPT, *Journal* 10/82 p. 20-21. Also, "The Magic Circle of Fifths," by Michael Kimbell, RPT, *Journal* 5/94, pp. 34-38. And, "Francesco Antonio Vallotti's Temperament Tuned According to Late Eighteenth-Century Theory," along with "Tuning Francesco Antonio Vallotti's Well Temperament of 1781 in the Theoretically Correct Manner," sections 51 and 52 respectively, pp. 179-186 of *Tuning*, by Owen Jorgensen, RPT, MSU Press, 1991.

Try out this temperament on your practice piano, and learn the circle of fifths sequence backwards and forwards. Remember to tune, stabilize, and retest unisons as you go. Your tools need be nothing more than a tuning hammer, tuning fork, and two mutes.

General instructions

Following the stepwise sequence above, the first participant should tune the first four notes (including unisons), and the three participants following should tune three notes each. The instructor should monitor progress, and make sure everyone understands all procedures at each step along the way. Each participant should complete their notes with unisons in ten minutes or so.

Upon satisfactory completion of the temperament, if time is still available, participants may wish to investigate and rank from slower to faster the beat rates of the thirds and sixths, using a metronome and estimating techniques described in PACE Tuning lesson #12. Also, if time permits, octave- and unison-tune the midrange or the whole piano and listen to and compare some chords and/or other music played in various key signatures. Especially, listen to a series of tonic major chords starting with C-major and progressing through E- and E- to B- and G-major.

In the course of conducting this lesson, the instructor should make clear that although this temperament is non-equal and therefore inappropriate to use for the RPT tuning exam, the skills of judging beat rates, using octave, fifth and fourth tests properly, and tuning stable unisons at a desired pitch level are essential for a successful career of quality tuning. As a bonus, participants will learn a well temperament that is, perhaps, easier to tune and more likely to produce pleasing results than equal temperament on some poorly-scaled pianos, and at least satisfactory results on many others.

Note: *Do you find these lesson plans valuable? Do you have specific suggestions for changes or clarification? Please direct any comments or suggestions to the author c/o the* **Journal.**

PACE
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LESSON PLAN

The Long & the SHORT of Temperature & Humidity

Kent Swafford, RPT • Contributing Editor

One of the questions that our customers ask most often is: "Why do pianos go out of tune?" Real answers to this question can be rather complex, and so are sometimes avoided. I believe a traditional flip answer is, "Well, if they didn't, I wouldn't have a job." Among real answers, a short, easy one might be, "Pianos go out of tune with the changes of the seasons."

But for those times when a customer is really interested and willing to listen for a few moments, one might have ready a well-rehearsed recitation of the mechanics involved. I say the following, pointing as I go:

"A piano has a few hundred pieces of heavy steel wire called strings that are strung very tightly, with a great amount of tension, across a heavy cast-iron frame called the plate. There is a thin, arched piece of wood parallel to the strings called the soundboard. A long block of hardwood bridges the gap between the two and pushes sideways against the strings. When the humidity is high, the soundboard swells with water absorbed right out of the air, increasing the arch, called crown, and forces the bridge to press harder against the strings, increasing the sideways deflection of the strings, and increasing the tension on the strings and forcing the pitch of the piano higher. When the humidity is low, the process reverses; the soundboard loses water and shrinks, the soundboard crown decreases, the bridge presses less against the strings, the tension on the strings decreases, and the pitch of the piano goes down."

Another answer that sounds flip, but really isn't is:— "*Everything* makes a piano go out of tune." Just about everything does make a piano go out of tune, including playing it, the simple passing of time, the day-to-day weather and the changes of season, the heating and/or air conditioning systems, the lighting...the list goes on.

Far beyond what we will ever be able to explain to our customers, piano technicians need to be aware of all the forces that can wreck fine piano tuning work. It is really a wonder that a piano stays in tune for any time at all and I think that a complete discussion should point out that pianos stay in tune much, much longer than many other instruments. After all, many musical instruments must be tuned each time they are played.

We often emphasize that the tuning on a piano is sensitive to changes in relative humidity, but the tuning of many musical instruments is very dependent upon temperature as well. The pitches of pipe organs and wind instruments are directly and immediately affected by air temperature, and many stringed instruments are also greatly affected by temperature.

Pianos are not as sensitive to temperature changes as other stringed instruments because ferrous materials are employed for both the piano strings and for the tension-bearing structure, the plate. Piano strings are made of steel, which is an alloy of iron and carbon, while the plate is made of

cast-iron, an alloy of iron, carbon and silicon. The plate and strings of pianos, being made of similar materials, have similar temperature coefficients of expansion. "Temperature coefficients of expansion" are relative measures of the change in size that materials will undergo as they get hotter or colder. In other words, as the temperature goes up, the strings of a piano expand, but they cannot slacken as might be expected, because the plate expands too, taking up the slack, so to speak, before it develops. Therefore, there is little net change in the tuning of the piano due to temperature change alone.

Harpsichords, by contrast, employ woods for their tension-bearing structure which show temperature coefficients of expansion as little as 10% of that of the steel of the strings. The brass wire employed in the bass strings of harpsichords exhibit even greater coefficient than steel. So, as the temperature goes up, harpsichord strings expand, especially the brass bass strings, but the wood on which they are strung expands little, so that the harpsichord lacks the tuning stability that we expect from the piano.

Of course, if you have ever come to a harpsichord to tune it in the high humidity of summer and found it to be 196 cents or more sharp, you know that in addition to being more temperature-sensitive than pianos, many stringed instruments are more humidity-sensitive than pianos as well. The relatively very high string tension of pianos is probably the reason; it takes more brute force to change the pitch of a heavily strung piano than to change the pitch of other instruments that are lightly strung.

Over the long term, then, pianos are affected by changes in relative humidity, but less affected by changes in temperature.

There are, however, short-term situations where temperatures can make a big difference in the tuning of a piano, and that is when the temperature is unstable. Think of doing a piano tuning where the strings of the piano are being exposed to intermittent air currents caused by forced-air heating or air-conditioning cycling on and off. Pianos are not particularly affected by temperature changes only to the extent that the strings and plate both expand or contract in similar fashion. In a situation where the temperature is continuously fluctuating, especially where intermittent currents of air are moving through a room that are a different temperature from that of the room as a whole, there may be an additional factor, namely the vast difference in mass between the large plate and the slender strings. When there is a temperature change, and particularly when there is moving air involved, I suspect that the strings of a grand piano with its lid up, exposed as they are to the open air, change temperature much more quickly than the relatively massive plate, and could expand or contract before the plate could be affected. Therefore, it could be that as the air surrounding a grand piano fluctuates with the cycling of the heating or air conditioning, the pitch of a piano could fluctuate noticeably if the strings are affected by the temperature change and the plate is not. (Vertical pianos may be less susceptible in this situation than grand pianos because vertical pianos, are, comparatively, most closed boxes, even when they are open.)

If during a piano tuning, after one pass through the piano, whole sections of the piano are not at the pitch level at which they were originally tuned, and assuming that no significant pitch correction was involved, and assuming that the plate bolts and pinblock screws are tight, then temperature fluctuations might be a possible cause.

Assuming that it is the change in environmental conditions during the tuning that causes problems, there may be any number of actions that could be taken to provide stable conditions and improve matters for the piano tuner. Some success in these drafty situations might come from turning off the heating/air-conditioning for the duration of the tuning. Or, assuming that steadily moving air can in itself constitute a "steady-state," one might, alternatively, adjust the thermostat so that the air conditioner stays on continuously and does not cycle off at all during the remainder of the tuning. (You'll have to remember to set the thermostat back to its original setting after the tuning is complete.) And finally, there might be some success to be had by closing the large lid of grand pianos during tunings, thus keeping the drafts away from the strings. (I have a very short, extensible tuning hammer that I shorten down as far as it will go when tuning grands with the lid down.)

There are many other examples of dynamic situations that could adversely affect piano tunings. Light can cause temperature changes as surely as drafts. For example, the tiniest sliver of direct sunlight on the soundboard can wreck a piano tuning. Given that the sun is always moving through the sky, any pattern of sunlight shining on a piano during a tuning will change while the tuning is being done, affecting the tuning in adverse ways.

Also, a piano kept in a room that is normally left dark can be a problem for a piano tuner. Bright lighting can sometimes warm a room noticeably. If a tuning is started immediately after the lights in a room are turned on, the warming of the room can affect the tuning. It would be much better to let the room warm up and reach some reasonable state of equilibrium before starting the tuning, if at all possible. If there is no time for letting the room warm up, one might even consider tuning in the dark. (I'm not kidding. Hands-free flashlights built into eyeglass-type headgear are available that allow light to be directed automatically in the same direction that one's head is pointed. I wouldn't be without them.)

INHARMONICITY & THE TEMPERAMENT

ARTICLE • 2

Inharmonicity In Isolated Intervals

Daniel Levitan, RPT
New York City Chapter

Last month I introduced this series of articles about the ways that inharmonicity affects the tuning of the temperament, particularly in small- and medium-sized instruments. In this month's article we'll look at the effects of inharmonicity on the beat rates of isolated intervals.

A musical tone is said to be harmonic when the frequencies of its overtones are integral multiples of its fundamental frequency—when, for example, the second partial is twice the frequency, or an octave above, the first; the sixth partial is six times the frequency, or a double-octave-fifth above, the first, and so on. This is the ideal condition of a variety of vibrating bodies, such as strings or columns of air.

Inharmonicity is the condition in which the pitches of the partials of a tone vary from this ideal. As is commonly known, tempered steel wire in the lengths, diameters, and tensions that are commonly found in the piano produces a tone that is inharmonic because its partials tend to be sharp of their theoretical pitches, increasingly so in successively higher partials.

The inharmonicity of a piano string no doubt contributes to its tone quality; but it is difficult for the ear to isolate, or to quantify in any useful way, the inharmonicity of a single piano string heard by itself. Even when the tone of two neighboring strings on a piano differ markedly, as at the plain wire/wound string break, it is difficult for the ear to pick out the degree to which the difference in tone between the two strings is due to differing inharmonicity rather than to other factors, or even to hear that there is more or less inharmonicity in one string than in the other.

One can, however, easily detect and measure the inharmonicity of a single string with a frequency counter such as an oscilloscope or tuning device. Such a device clearly shows that the frequency of an overtone of a piano string is always greater than an integral multiple of its fundamental frequency, and that the degree to which it is greater increases geometrically as the overtones climb the harmonic series.

It is possible to hear inharmonicity directly, and even to quantify it by ear, but only when two strings are sounding at once. A good example of this is a unison of two mismatched bass strings or two unlike sizes of plain wire. It is impossible to tune a pure unison in such a situation because the different amounts of inharmonicity in the two strings make their partials sharp to different degrees. Even if the unison is tuned so that one set of partials matches perfectly, the others will not match and will sound out of tune. One can quantify this inharmonicity if one isolates particular partials and notes the different rates at which they are beating.

Inharmonicity, then, is perceived in two ways. In the first instance, inharmonicity is perceived as an aspect of the tone of an individual string. This kind of inharmonicity is not readily evident to the ear but is quite evident when one measures the frequencies of the partials of a string. In these articles I will refer to this kind of inharmonicity as primary inharmonicity. The second kind of inharmonicity is an aspect of the sound created by at least two strings sounding together.

This is the kind of inharmonicity we grapple with when we are tuning aurally, and it is instantly evident to the ear. This kind of inharmonicity I will call secondary inharmonicity. It is the aural manifestation of primary inharmonicity when two or more strings are sounding simultaneously.

In a unison, if both strings have the same primary inharmonicity, no matter to what degree, together they will have no secondary inharmonicity: it will be possible to tune them as a unison that sounds as pure as if the strings had no primary inharmonicity at all. If they have differing degrees of primary inharmonicity—even if the primary inharmonicity of one of them is zero—the two strings together will have some amount of secondary inharmonicity, and it will be impossible to tune them as a pure unison.

Primary inharmonicity also results in secondary inharmonicity in intervals other than the unison. To get a clearer picture of how this happens, imagine a piano with strings whose primary inharmonicity can be varied at will. If all the strings on this piano had zero primary inharmonicity, equally tempered intervals in the piano would all beat at the commonly accepted theoretical speeds. On such a piano, we could tune A4 to 440 Hz, tune A3 exactly an octave down at 220 Hz, and then tune an equally tempered major third, F3-A3, to beat at exactly 6.9 bps.

What would happen to the beat rate of that major third if the primary inharmonicity of all the strings in the piano were now increased while the pitches of the fundamentals remained constant? Remember why the major third beats in the first

place. It beats because the coincident partials of F3 and A3, at A5, are out of tune with each other. Moreover, because the interval is wide we know that A5, the fifth partial of the lower note, F3, must be flatter than A5, the fourth partial of the upper note, A3. Adding the same amount of primary inharmonicity to both strings would make both sets of partials go sharp; but the fifth partial of F3 would climb sharper than the fourth partial of A3, because it is higher in the harmonic series.

Therefore, if we were to increase both strings' primary inharmonicity by the same amount, even though the fundamentals remained at the same pitch, the interval's beat rate would slow down; in other words, the interval would appear to be narrower.

Let's try the same experiment with a minor third, say F#3 and A3. In this case the coincident partial is C#6, the sixth partial of F#3 and the fifth of A3. If the primary inharmonicity level in our imaginary piano is zero, the equally tempered interval will beat narrow at 9.9 bps. In this case, the fact that the interval is narrow indicates that the partial that belongs to the lower note, F#3, must be higher than the partial that belongs to A3.

If we were to increase the piano's primary inharmonicity, both sets of partials would go sharp. The partial belonging to the lower note again would go sharper because it is higher in the harmonic series, and this time the beat rate of the interval would increase; again, the interval would appear to be narrower.

With primary inharmonicity at zero, we could tune an equally tempered fourth, A3-D4 with a coincident partial at A5, to beat wide at 1.0 bps. If we were to increase the primary inharmonicity in the piano, the fourth partial of the lower note would sharpen more than the third partial of the upper note, slowing down the beat rate and again making the interval sound narrower.

In all three of these cases, adding the same amount of primary inharmonicity to both strings of an interval increased that interval's secondary inharmonicity, and as a result the interval sounded narrower. We can generalize these examples as:

Rule of Thumb #1: Increasing the secondary inharmonicity of an interval, assuming that the fundamental pitches of its component notes remains constant, will make the interval appear to be narrower. Its beat rate will slow down if the interval is wide, and speed up if the interval is narrow.

Returning to our imaginary piano, let's examine a more complicated case, the fifth. If we were to tune the equally tempered 3:2 fifth A3-E4 narrow at 0.7 bps, and then raise the piano's primary inharmonicity, the interval would appear to narrow as before, and so its beat rate would increase. In this case, however, we would hear two prominent beats, one at the 3:2 level and one at the 6:4 level. Both beat rates would speed up; but, because its partials are higher in the harmonic series, and even more so because there is a gap of one partial between them, the beat at the 6:4 level would speed up to a much greater extent than the beat at the 3:2 level. Even if we were now to widen the fifth a bit by retuning it—in fact, even if we were to make it pure at the 3:2 level—the fifth would still beat narrow at the 6:4 level.

There is a common rule of thumb in temperament tuning to prefer, if one must choose, a too-wide fourth over a too-narrow fifth. We now have the means to understand one of the reasons for this rule.

Keeping the same moderate inharmonicity level on all the strings of our piano, let's tune both a wide 4:3 fourth, A3-D4, and narrow 3:2 fifth, A3-E4, to precisely one beat per second. The fifth will have a clear beat at the 6:4 level at a rate much greater than if there were no secondary inharmonicity; and it will also have much faster beats, but progessively fainter ones, at the 9:6 level, the 12:8 level, and so on. In other words, because of secondary inharmonicity the coincident partials above the 3:2 level will beat more rapidly, and will therefore tend to make the fifth sound noisier than if there were no secondary inharmonicity.

The fourth will also have beats at levels above the one beat per second 4:3 level; but there will be fewer audible ones (8:6, 12:9, and so on). More importantly, the beats at these higher levels will all be slower than if there were no secondary inharmonicity—not faster as in the fifth. This is due to the same tendency of secondary inharmonicity to narrow the upper partials to a greater degree than the lower ones. In fact, the fourth may actually be pure or narrow at the higher levels. The fourth will sound less noisy than if there were no secondary inharmonicity.

We can generalize the above as:

Rule of Thumb #2: Under conditions of positive secondary inharmonicity, a fifth beating at the same rate at the 3:2 level as a fourth at the 4:3 level will be much noisier than the fourth.

To put it another way, under conditions of positive secondary inharmonicity, if a fifth and a fourth are to be tuned equally noisy, the fifth must be tuned to beat more slowly at the 3:2 level than the fourth beats at the 4:3 level.

In this article we have discovered that when primary inharmonicity levels in both of the component strings of an interval increase by the same amount, the secondary inharmonicity of that interval also increases, making the interval appear to narrow. Can we conclude then that when tuning a temperament in a piano with high inharmonicity we should expect all the narrow intervals to beat more quickly, and the wide ones more slowly, than the theoretical ideal? Absolutely not—not even if all the strings in the temperament have exactly the same primary inharmonicity, as in our imaginary piano. We'll find out why next month.

BEHOLD

THE UPRIGHT

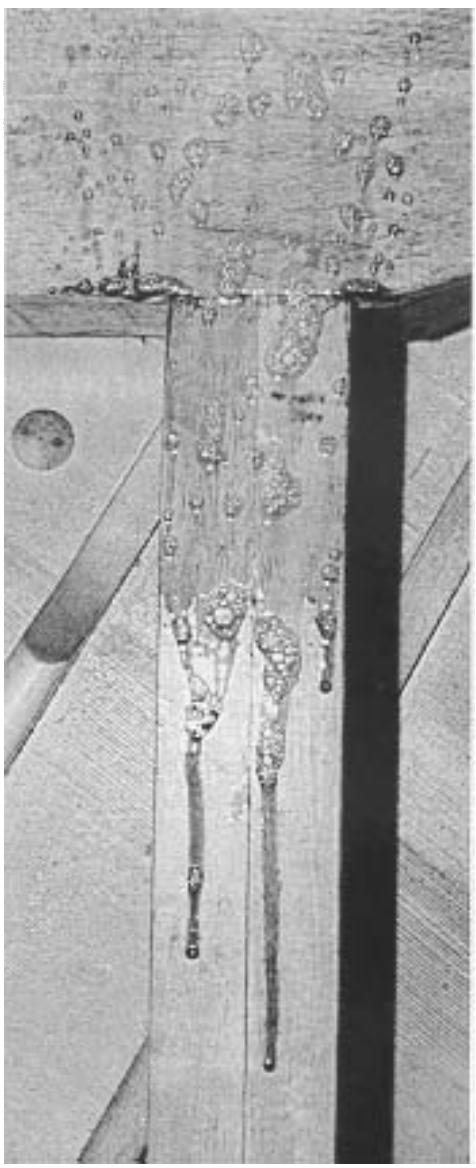
By Don Valley, RPT
Western Carolinas Chapter

Now that the business of caster mechanism and the pedals and trap work is out of the way, I will begin this with a brief prologue consisting of some ideas and follow-up reminders regarding last month's writing. These will be in random order.

The Case—Clean it thoroughly

Prior to getting into any process of repair, except for perhaps the casters and bottom board, when a piano comes to the shop, the first procedure is to get rid of as much debris as possible. The reason for getting at the casters and bottom board even prior to cleaning is to insure mobility and safety. In case you have not realized it, the upright is designed with a low point of gravity causing it to fall backward when casters do not roll and you try to push it around. You might describe it as being top heavy. And, while the piano is laid back on the tipper, that is a great time to take care of the bottom board as illustrated last month. This is for protection from any kind of vermin that may be resident. Two types of initial cleaning are recommended: 1) Get the air hose and blow it out. If you have the setup for it to be outside your shop when you do this, then by all means keep this mess out of the shop. Heavy collections of all types of junk are usually lodged in the channels along the bottom of the back beams. Blow this out thoroughly—it may get rid of some extraneous noises such as difficult-to-locate soundboard buzzes. Back at the front of the piano, remove the action so it can be blown out separately. Blow the antique dust away from all areas inside—bridges, keybed, strings, tuning pins, toe blocks, plate and any other spots debris may be lodged. All joking aside, such a cleaning can save you from any infestation transported to your shop via this piano. It has happened to me more than one time. One such instance was a small vertical taken to the shop for repair with literally hundreds of roaches to contend with. Oh boy!!! 2) Wash the case with a good cleaning solution; this is for finished wood surfaces, not raw woods. In most instances, a very strong household cleaner used full strength will make an astonishing difference in the appearance of the furniture. Even though the case will be refinished, it is best to wash it down prior to stripping. Many of these pianos have set in homes where there have been various types of smoke—coal, wood, tobacco, fuel oil and the like. As you spray the finish with the cleaner and see the rundown colored like molasses (photo 1) and then wipe it away, you will realize the benefit of not having this scum left on the piano while you are working on it.

Solutions I have used successfully are pure undiluted household ammonia or a 1:1 dilution with water, Westley's Bleche White (white-wall tire cleaner with ability to bite into the finish if left very long), 409, Fantastic,



Spraying the finish with the cleaner will cause the molasses-like scum to run down and you will see the benefit of cleaning.

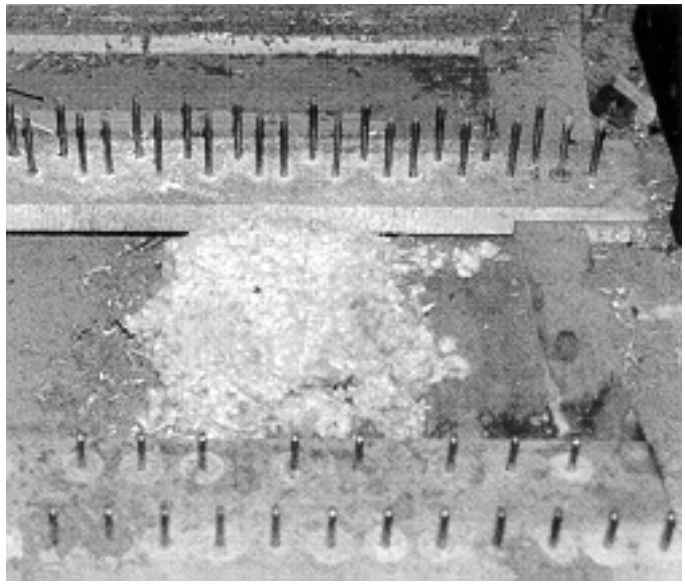
and other similar types. I try any product I can get my hand on to see what works the best for the circumstance. When you have a 70-year collection of environmental junk, you will be astounded at what is released from that old finish. One of the more noticeable areas is the back of the piano—the top beam, the back posts, the soundboard and ribs. Even though the cleaning process is a dirty job for you, it actually yields very rewarding results.

Broken Pedals— How do I deal with them?

As I have done, I suggest the same for you. Locate a person who has pride in his welding technique. Befriend him and take your metal repairs there. The more you deal with him the more piano-friendly he will become. He will learn to understand your need for perfect and exacting alignment of the parts, especially when it comes to action brackets. A twisted pedal surely is less than unobtrusive! Also, acquire a good local source for plating; most do nickel as well as chrome.

More frequently, the person doing small parts is becoming rare. With EPA breathing down necks, the cost of coming up to code and cooperating with the changing laws can be business "busting." So, many platers are either going into some other business or expanding into industrial accounts where dealing with the small parts client with incidental needs becomes completely impractical.
Prologue finished.

Moving upward from the bottom, the next level is the keybed and keyframe. As you probably realize, when the keys are removed from the frame, you are open to all types of surprises. Anyone who has opened up old uprights can testify to discoveries beyond the wildest imaginations. I am still waiting for that twenty-dollar goldpiece instead of the traditional coin denominations. Not being a numismatist, I just take all coins and put them in a little plastic drawer. Having been robbed once of my collection, I still have not chosen to do otherwise. Aside from moth larvae shells, moth fecal matter (looks like sand), mouse droppings, roach stains and shells, total rodent nests, you will find at times the balance rail and front rail cloth punchings eaten away. (Photo 2). Sometimes, even the back rail cloth. Also, be on the lookout for something appearing to be talcum powder, usually white or green. ***Beware!!*** This is a type of protection used years ago to keep the previously described conditions from happening. It usually did a good job. However, this has a percentage of arsenic in it and is very poison. Use caution when cleaning by wearing a face mask. By all means, dump your vacuum bag immediately. I prefer to vacuum it away in order to get the most of the bulk under control before I do a final air hose cleaning. Usually, there is not much left after the vacuuming process, but the forced air puts a polished touch to the cleaning.



Moth larvae shells, moth fecal matter, mouse droppings, roach stains and shells, total rodent nests may be found inside the piano.

I know of no one who likes to work in a messy environment, so cleaning prior to technical repair is of great importance. If you use a little bit of "overkill" on the cleaning side, it makes as much an impression on most clients as the real meat of all your work. The visual aspect will testify first to the quality and care of your work.

The Keyframe

Check over all aspects of the frame to judge the needed work. Determine the condition of the front rail pins, the balance rail pins, the punchings — both paper and cloth— and the need for cleaning. Proceed to remove the frame. Mark or arrange the screws so as to place them again in their original locations. Also, either on removal of the screws, or just prior to reinstallation, sandblast the rust away and then buff on the wire wheel. As you remove the frame, the balance rail may come free from the rest of it. Be certain to keep any cardboard shims in their correct locations on the cross strips. Just a small amount of glue securing them to the frame is enough.

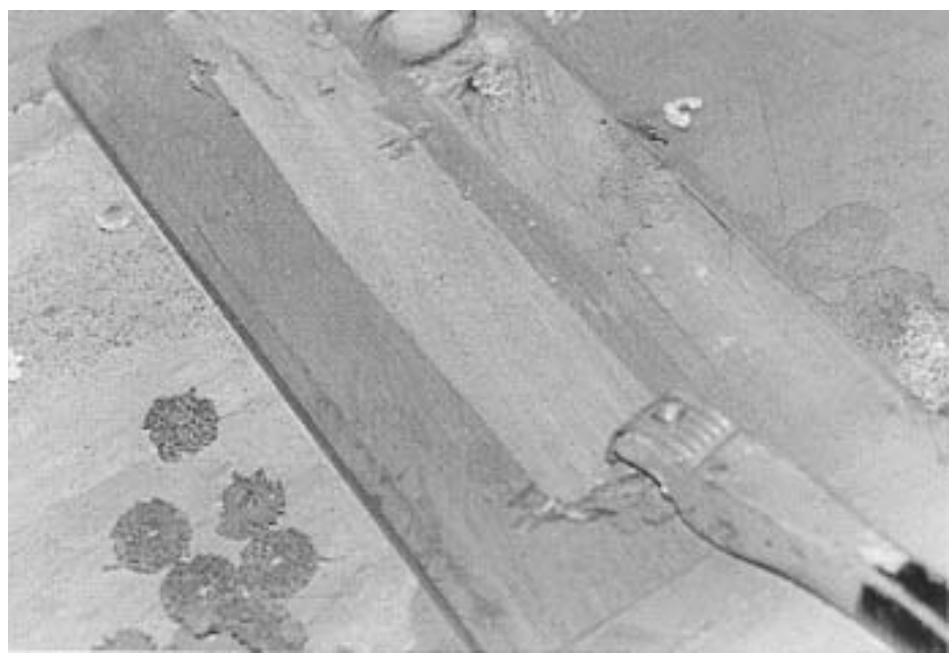
Having determined the frame needs cleaning, it will be sandblasted. It is good here to have an extra key frame, or copy of one, for the purpose of storing the existing paper shims insuring exact replacement back onto the original. This allows the paper shims to be preserved without damage. This is presuming you have determined those on the frame are in good enough condition to retain. If the old paper shims are brittle and chewed, discard them and begin the process with new ones as you begin to reinstall the keys later on. Sand being an abrasive, you must protect the sets of pins while you sandblast the wood. I keep a set of "tubes" for each rail to be slipped over the pins prior to blasting. Tracker bar tubing is just right for the balance rail pins and the larger expression tubing is used for the front rail pins. (Photo 3-

page 32). You can purchase the clear neoprene tubing at your local hardware in various dimensions in the event you do not do players. Also, hobby and pet shops carry similar stock for model fuel lines and for fish tank air supply. The reason for rubber or neoprene is that the sand bounces off it rather than cutting into it. This is the same principle used on those beautiful embossed wooden signs; a coating of rubber is laid over those areas chosen to remain unsanded. The unrubberized areas are sandblasted until the appearance is that of hand carving. Prior to putting the frame in the sandblaster, as a matter of saving time and work, take a sharp paint scraper and remove any glue remaining from the backrail cloth. The paint scraper is a tool I highly revere! It can be used in a myriad of situations. Properly sharpened and maintained that way, it does a great job of getting surface dirt lifted, removing glue, and leaving the wood surface clean without changing dimensions by removing some of the wood (Photo 4).

As a matter of course, if the frame needs cleaning, so does the key bed. With the frame off, it is easy to see where cleaning is needed. Avoid the temptation to take some type of liquid to do this task; it just serves to soak the stain deep down into the grain. Remember, this is raw, unfinished wood. Be sure to determine the direction of the grain end in order to scrape in the right direction and not pull up the ends of the grain sheets (Photo 5). Pull your scraper in the direction of the arrows. Note the points of the sheets of the grain ends; this makes the ends easy to identify so you will know to not pull toward the points but to pull away from them. Prior to the reinstallation of the keyframe it is advisable to do some light fine hand sanding in order to achieve a smooth finish where some fibers may have been lifted.

The scraper is easily sharpened on a mill bastard file; this is the type where the cutting ridges run diagonally across the file in only one direction. Since the cutting ridges face the nose of the file, you must draw your scraper from the nose back to the handle. Do

Tubing used for the front rail pins—photo 3



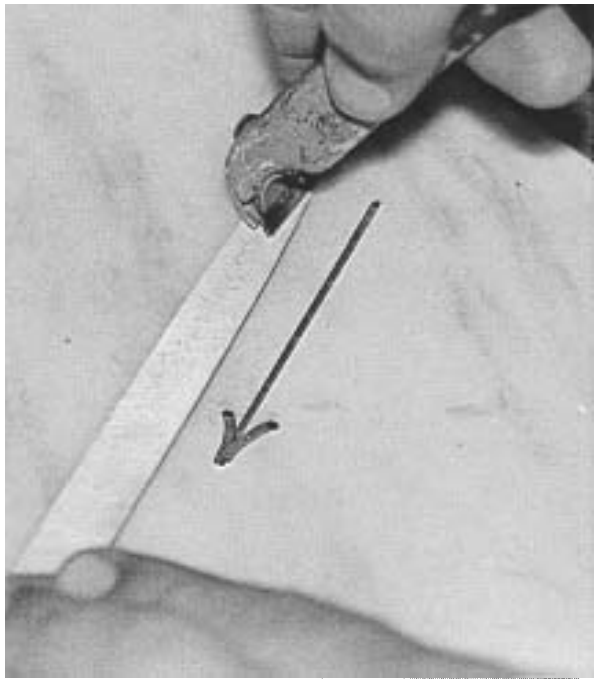
The paint scraper used to lift surface dirt, remove glue and any other surface grit—Photo 4

Determine the direction of the grain in order not to pull up ends of the grain sheets—Photo 5

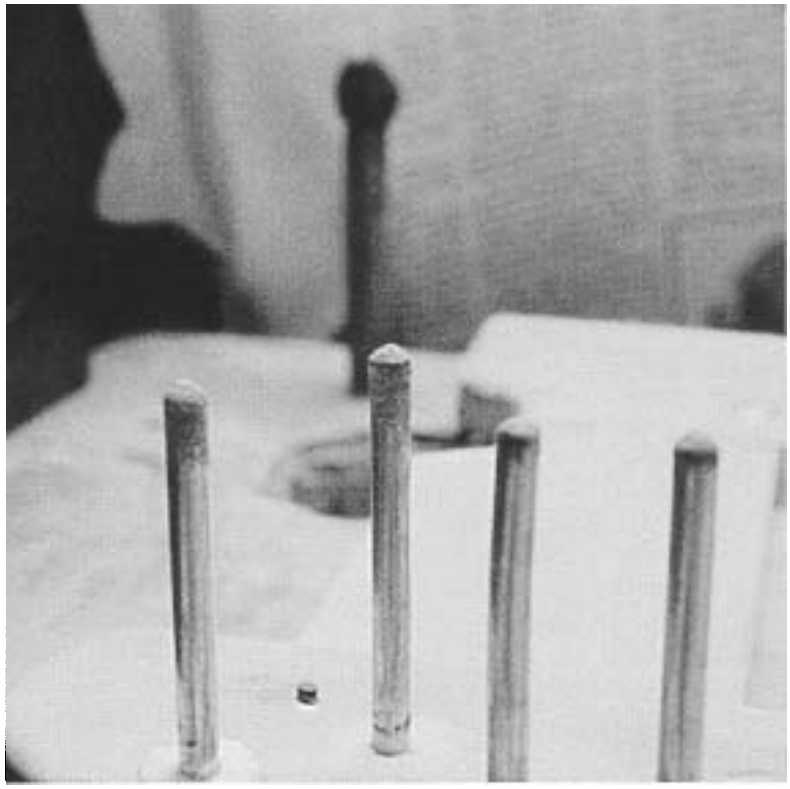
not go back and forth as it dulls the edges of both the file and the scraper. The proper position for the best cutting bevel is to hold the scraper handle about 45 degrees from horizontal. (Photo 6). Draw the scraper from nose to handle, keeping it firmly pressured on the file—doing this several times, depending on the initial dullness of the blade—until you feel solid resistance. Then you know the file is actually doing its work.

With the wood cleaning behind us, attention should be given to the condition of the pins, both in the front rail and balance rail. Any roughness and corrosion must be removed in order that the front and center bushings do not become prematurely worn, as well as removing friction for allowing totally free movement of the key. At times you may determine there is too great a buildup of corrosion and rust to arrive at satisfactory finish results; you may select to remove and replace the pins with new ones. Or, if the balance rail pins are too loose in their seating, you must improve the seating or replace with larger pins. If the latter is chosen, be certain to rebush or rebutton the key so as to allow for the increased size. Many times it is possible to restore the wood fibers for the pins in the same way as is occasionally possible for impregnating the pinblock to tighten the pins. It works better on the keyframe because of wood being less dense. After using such a chemical for the balance and/or front rail pins, it is best to judge the effect after a wait of at least 12 hours, no matter how quickly the advertised working time.

As in photo 7, rust is built up at the top of the balance-rail pin. If this is not removed, you are entertaining the premature wear of the new bushing cloth, not to mention friction so blatant that you will have to ease keys to such a point to negate the effect of replacing the bushings. Fine finger work here with the typical patience of the seasoned technician will give good results. Start with a 3/8" wide strip of emery cloth—or similar abrasive material—with a grit no greater than 220. Larger grit can cut too deeply into the metal. Using alternating pulling motion, take this strip of material in the thumbs and forefingers. Loop it around the top of the pin and alternate pulling motions to remove the buildup, making sure you get at the total 360 degrees of that area. (Photo 8). This abrasive technique is only for cases of extreme rust. From this point, decrease the size of the grit in progressions, EG: 350, 400, 600. Once this procedure is finished, take a tool designed for pin polishing (Photo 9), use a type of automobile buffing compound, either placing it inside the cloth of the tool or finger dabbing it onto

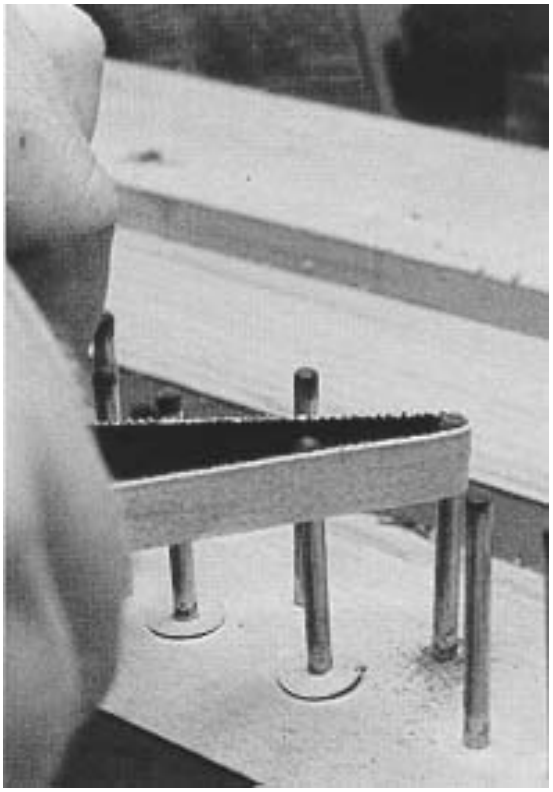


The proper position for the best cutting bevel is to hold the scraper handle about 45 degrees from horizontal—Photo 6



Rust which is built up at the top of the balance -rail pin should be removed to avoid wear of new bushing cloth and friction—Photo 7

the pin itself. Because this can be a messy chore with the ability to stain the newly cleaned wood, place a front-rail paper punching of .015-.020 as a shield while you work the pin. With each pin buffed clean, use a soft cloth to remove any compound remaining on it. Now you can finish the job by spraying the pins with one of the dry lube products. The same procedure for cleaning can be used on the front rail pins. You will come up with excellent results.



A 3/8" wide strip of emery cloth or other abrasive material will remove the buildup on the top of the balance-rail pin—Photo 8

Veering off course for a minute, I realized some may not understand some of the basics of "sandpaper." When grit is mentioned, that is the type of sand or abrasive element glued to the backing material to make up the sandpaper. The numbers given specify the number of grains it takes side-by-side to fill one lineal inch. #40 is very coarse having only 40 grains per inch. The most prevalent span of grits in the piano shop runs from about 80 to 400. However, these grits go all the way beyond 1200. Various types and qualities of backing cloth specify its projected use. Emery cloth is very durable because it does not tear easily. Wet or dry papers must, of course, have glue that is not water soluble for adhering the abrasive. Aluminum oxide is one type of grit that holds up longer, does not dull quickly and does not clog easily. The least expensive papers are probably the most costly in the long run because of the quick breakdown. The most expensive types cut for a greater length of time and can be re-used many times over. Sources for the very fine grit products are automobile painting supply establishments.

The keybed and keyframe work can be accomplished in the piano as well as on the bench. Now that it is finished, replace the keyframe back onto the keybed. Those original paper punchings can now be transferred back onto the frame—that is, if you chose to keep them. Using measurements you took prior to removing the keys from the frame, it is time to do dry fitting of the backrail and punching cloth. To begin with, use the same thickness of backrail cloth you removed from the frame and likewise with the balance rail punchings. Check your measurement at the front of the key. If within small tolerances, you will need only to level the keys using paper punchings at the balance rail. Greater differences will require the choice of thicker or thinner back rail cloth or balance rail punchings. Right now, we are just getting into the ballpark. The final determination comes with the finished action back in place and full regulation is approached. The details of key regulation and height determination will be covered in a later article emphasizing the regulation process.

Next month the subject will be keys—types of repairs, typical problems, solutions, bushing methods, cloth choices, keytop replacements in part and total, and friction points.

A pin-polishing tool and buffing compound will complete the job—Photo 9

The Tuner

By Paul Monroe

For the beginner, you can vary the temperament, you can vary the octave but you cannot vary the unison tuning. You can be the greatest at setting a temperament and stretching the octaves, but if you can't master the unison then all is for naught. Accuracy and stability are a must.

With this in mind you should practice most on unison tuning until you have it mastered. With this, of course, you will need a good tuning hammer technique. You can tune a good unison but if it doesn't stay where you put it when you give it a hard test blow, then you must tune it again and again until it will stay tuned.

Before getting into details on this, however, let's talk a little about unisons. I believe the beginner should visualize that each string has many different frequencies or partials and you are trying to match the partials of one string to another perfectly so as not to create any beats or slow rolling effect.

There will be times on the lesser-quality pianos when you will be confused with what you hear. It will seem next to impossible to get a pure unison. If this happens to you, check each string of the unison by playing an interval, ie: tricord A3. Play each string separately with one string of the F3 tricord and compare beat rates. If they are the same, you're in.

Some of the experts have said they like to tune unisons just a little out of sync to give it more color. When you become a craftsman tuner, try it, but for now I suggest you try for purity.

Unison tuning in the top treble section can be the most difficult due to false beats. (A false beat is when an individual string has a beat rate all its own.) To help you with this problem, play the note before you remove the muting strip and listen for the false beat rate. As you tune the unison you will hear that beat rate plus the beat rate you hear as you turn the tuning pin. The beat rate you want to listen to is the one that changes.

One of the questions frequently asked is where do I start tuning unisons, the bass or the treble. I start with note C8 in the treble using the following procedure to obtain stability.

I learned the basic principle of this method from George Defebaugh. The details about why I use this system will be discussed in the next issue of the Journal. "A Procedure for Raising Pitch." It will be for the RPT member as well as the associate.

As you start tuning unisons down the keyboard from C8 to the tenor-bass break, tune the bottom pin only on a vertical and the tuning pin closest to you on a grand. Remove the muting strip one unison at a time to open the string you want to hear. When you arrive at the treble damper section on a vertical, depress the sustain pedal and remove the muting strip from the treble section only. For the balance of these unisons to the treble-tenor break use the rubber wedge with a handle that has the temperament strip attached. See the previous Fig#1.

When you have tuned all of the bottom pins on a vertical or the pins closest to you on a grand, you now have all muting strips removed. Proceed from the tenor section back up the keyboard to C8, tuning the top pin on a vertical or the pin farthest from you on a grand.

One of the minor advantages in using this method is that you will discover which unisons previously tuned have gone astray. However, the major advantage I believe is that you have evenly stressed the bridge and the soundboard and they will give you much less of a problem than if you had tuned all the tuning pins starting at the top and working down to the tenor-bass break. If a soundboard or bridge moves, so does your tuning. This is especially noticeable in raising pitch. In my next article I will give you detailed sketches of what I think happens when you put stress on a bridge during the tuning process.

There is another very important thing you must remember and that is to be careful how you remove the muting strip. If you are not careful you may damage the damper felt.

When you remove the muting strip, depress the key or keys that are related so as to release the dampers from the strings. When you do remove the strip, it will force the string to move parallel to the soundboard, crushing the felt if it is still on the string. This is especially true with trichord and bichord damper felt. See Fig. #3 in the previous issue of the Journal.

On to the subject most intangible but of the greatest importance: tuning hammer technique. Your reputation as a good tuner is hinged on your ability to handle the "hammer." You don't want your clients to say "his tuning is all right but it didn't last." Good hammer techniques enhance your ability to have your tuning "last." This of course means that you have a good instrument on which to demonstrate your ability.

Each tuner has his own technique. Therefore, to be able to set down a specific procedure is next to impossible. Here are some of the reasons why.

The sensitivity of hands and fingers is different in each individual, as is your hearing. No two of us hear or feel the same. You will have to develop your own technique; however, I will not leave you at this point without at least giving you some basic suggestions.

I believe a good method to achieve stability is the impact method. This manner of handling the tuning hammer gives you better assurance that the tuning pin did indeed turn when you thought it did. The pinblock hangs on for dear life to that tuning pin. It will hold on so tight that if you give a steady pull, the pin will twist and when it twists it will eventually return to its original position. Try to develop a snapping action in your wrist. I use a number 2 tip on my hammer which

allows no movement on the pin which enhances the snapping action of the wrist. For raising pitch, some tuners use the Mehaffey impact hammer available from piano supply houses.

The position of your hammer on the tuning pin is also important. On vertical pianos most all tuning instructors suggest the hammer be placed on the pin at the 10 o'clock position if possible. For the right handed tuner, I suggest you stay close to the 12 o'clock position.

On grand pianos, tune right handed with the tuning hammer in the 3 o'clock position. When you get to the top treble section, you can switch to your left hand with the hammer in the 12 o'clock position. You can also stand at the end of the keyboard using your right hand on the tuning hammer in the 12 o'clock position.

There are tuners who feel you should stand while tuning a grand. My reason for sitting is twofold. First of all, I have a back problem and I am prone to doing things the most comfortable way I can find. Also, I feel strongly that you should be comfortable in tuning. It removes another distraction from your concentration.

A basic thing to remember is the tuning pin must turn. You must develop a sense of feeling to know if the pin is turning or twisting. For an easy way to see what happens when a pin twists, drill a hole for a hammer shank. Take a hammer shank and draw straight lines from one end to the other. Drive it into the holes, place a pair of vise-grips on the end away from the hole and twist. The lines that you drew will now have a curve to them. This is what happens to the tuning pin if it doesn't turn in the pin block. If you leave the shank you twisted long enough, it will return to its original position, just as the tuning pin will do also. Leaving a twist in a tuning pin is unacceptable. It will not result in a well-tuned piano. It may sound good when you leave but in a few days you will receive a call to go back and do it over again.

There are many methods to develop good hammer technique, all of which have validity. Rather than confuse you with any more suggestions and methods, start with the method I have outlined above and when you feel a little confidence start to creep in, be creative and start to develop a technique that best fits you. Be sensitive to everything you feel and hear. If something happens on a continuing basis and you don't know why, follow rule number three.

Now that we know all those wonderful ways in which dampers can misbehave, how do we go about figuring what's wrong when a customer calls with that note that keeps on singing, or a piano that grunts when they step on the pedal?

Step one is familiarizing yourself with damper systems and their operation so that you can visualize parts in motion as you discuss the problem with the customer. You'll also want to develop a mental archive of damper problems, much as we discussed here in the last two months, to give yourself several starting points for diagnosis.

The greatest tool for both of these brain builders is attending chapter meetings. Experience is a great teacher, and there's no better way to compound, or leverage your experience than by tapping into the collective pool of experience at attendance at a chapter meeting.

Step two begins when the customer calls. You need to find out:

• When does the problem occur? All the time? Sometimes? Certain songs? With the key? With the pedal? Which pedal? Does it ever go away?

• To whom does the problem occur? Mom? Dad? Teacher? Student? Everyone?

You must also tell the customer:

• Whoever is having the problem must be present when you make the service call (good policy for any call).

• The customer must verify that the problem exists before the call. You can't fix a problem that doesn't exist. You should call the night before and ask them to make sure the problem is still there. If it's not, that saves you time, saves the customer money for a wasted service call, and provides additional evidence for future problems.

Step three occurs at the piano. Have the person with the problem make the piano produce the symptom. Your job is then to isolate the part causing the symptom and fix it.

The most efficient way to isolate parts is the process of batch elimination. Imagine you're pulling two hay racks with your tractor. Over the pleasant putt-putt of the engine you hear a wheel bearing gone bad on one of the racks. The quickest way to determine which of the eight wheels on the two racks is bad is to chop the problem in half—separate the potential trouble makers into two large groups.

Disconnect the back rack and pull the front rack. The problem will now reside in either rack (group of four wheels), and you've already eliminated half of the potential bad parts. Repeat this process on the rack with the bad wheel by jacking up one axle, again separating the parts into two large groups. This will isolate the problem to one axle. These two steps eliminated six of the eight potential bad wheels, far more efficient than randomly jacking up individual wheels.

Troubleshooting pianos works the same way. Think of pianos as a train of parts that can be cut in half to isolate the problem. For damper and pedal troubleshooting the keybed is often a good halfway point to start. Isolate the problem to either above or below the keybed and you're halfway there.

Here are good starting points for two common problems in grands.

Right pedal squeaks. Lift the trap lever under the keybed that the right pedal rod bears against. If the squeak is gone, the problem is the pedal rod/trap lever interface or below. If the squeak remains, the problem is the tray lift dowel/trap lever interface or above.

Shift pedal squeaks. With the fallboard out and keyblocks in, place a prying tool between the bass end of the action (on those pianos that shift to the right) and the inside of the case. Shift the action with your lever being careful to not lift the keyframe off the keybed, or press the keyframe into the keybed. If the squeak is gone, the problem is the shift lever/keyframe interface or below. If the squeak remains the problem is the keyframe/keybed interface or up and over to the return spring.

Techno-*Stuff*

By Richard Anderson, RPT
Feature Writer
Chicago Chapter

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

CHAPTER MATTERS

By Keith Bowman, RPT
Chairman • Chapter Services Committee

Or, I could say, *chapters matter,* simply meaning that the chapter is the basic unit of support to the PTG member as well as the basis for local community and teacher outreach. Chapters are the way we get things done in this organization. This was a common theme heard throughout the July convention in Kansas City.

I'm sure you will agree that the strength of PTG is directly related to the combined strength of all 164 or so chapters. Weak, ineffective chapters will not help us increase membership, upgrade Associate members, provide quality continuing education for our membership, or educate the public about the benefits of qualified piano service.

As chairman of the Chapter Services Committee, I am particularly concerned that chapters have all the opportunities to garner ideas, programs and resources that can help to improve and expand their chapter functions.

This committee has been charged to provide support in many areas, including meeting management, technical programs, fund-raising, public relations, newsletters, membership and Associate upgrades—working with other committees where appropriate.

But we are not a think-tank that is going to generate brilliant ideas and innovations. We will depend upon you, the chapters, for the ideas. Like a clearing house, we can organize information in a way that will help chapters make decisions for improvement.

The committee is in the process of establishing a new and more effective procedure for monitoring chapter activity, as part of the basis for recognition awards, but more importantly to publicize all the great things your chapter is doing—for the benefit of all the rest of us.

Next month, I will explain how the committee will operate, so that we all know what we're doing and why we're doing it. But now, please read on and find out what the award-winning chapters have done in this last year...

Chapter Achievement Awards

Presented to the outstanding chapter in each size category. Category I, 5-15 members; Category II, 16-34 members; Category III, 35+ members.

Category I/South Central PA

This chapter boasts very high attendance for its meetings and functions. One new member this year, 12 regular meetings, 4 technicals, some with guest speakers, several board meetings and work sessions for convention flyer mailing and planning. 100% participation as host chapter for 1994 PA State Conference, mailing to 400 teachers for historic temperament recital and other factors made this chapter notable.

Category II/Waukegan

This chapter puts out a great newsletter, the *Partial Post,* has regular monthly meetings, added one new member and completed a chapter fund-raising project, a Kimball concert grand put up for sale. (They maintain a shop for their projects.) Vice-President Carl Radford did a well-received presentation on the subject of temperaments for the Illinois State Music Teachers Association. Utilizing several lessons from the *PACE* Program to help their Associates and good attendance at chapter functions round out this chapter's accomplishments.

Category III/San Francisco

This chapter also published an excellent newsletter, had 10 monthly meetings and 9 technical programs. California Music Teachers Association enjoyed the class, *The Care and Maintenance of Pianos* at their state convention, taught by chapter members Michael Kimbell and Margie Williams. The chapter has a scholarship program which includes $350 for the San Francisco Young Pianist Award, and $175 for the East Bay Festival Award. They have added 5 new members and hosted the 1994 California State Convention.

Chapter Recognition Awards

Several other chapters were recognized for their noteworthy activities.

- **New Hampshire** for membership participation and chapter involvement.
- **Connecticut** for chapter involvement and the New England Eastern Canada RegionalSeminar.
- **Louisville** for chapter involvement and community outreach.
- **Dayton** for chapter activity and hosting Ohio State Convention.
- **Indianapolis** for chapter activity.
- **Twin Cities** for chapter involvement and community outreach.
- **Monterey Bay** for chapter progress and activity.
- **Modesto** for chapter progress.
- **San Diego** for chapter activity and community involvement.
- **Pomona Valley** for chapter progress and activity.
- **Montana** for membership participation.

Newsletter Awards

Newsletter editors who responded to the invitation to enter the '93 - '94 Chapter Newsletter Contest had their best efforts evaluated by a panel of qualified judges including PTG staff and an outside journalist. Entries were judged on both technical and editorial merits. Here are the results.

1st Place: *Valley Technician*
Sacramento Valley Chapter, Mark Stivers, Editor; Patrick Poulson, President.

2nd Place: Vancouver Beat
Vancouver, British Columbia Chapter, Paul Brown, Editor and President.

3rd Place: Partial Post: Waukegan Chapter, Richard Schwinn, Editor and President.

Houston Chapter Makes its Mark At TMTA Convention

A year of planning paid off as the Houston Chapter represented PTG to the Texas Music Teachers Association at their state convention June 10-14, 1994. With attendance close to 4,500, this state event eclipses the MTNA National Conference.

The Houston Chapter focused on three areas of involvement: scholarships for piano competition, a one hour seminar on piano technology, and an exhibit booth.

At the piano competition winners' concert, scholarship checks were presented to the three winners. The amounts for each category were: $75 for Junior High, $150 for high school and $250 for college. Handing out the checks gave chapter member Martin Wisenbacker an opportunity to speak on behalf of PTG and invite the audience to attend Jim Geiger's class, "Developing the Power of the Piano's Tone," scheduled the following day.

Jim's presentation included some theory about partials, tone regulation and how action regulation affects tone. The class was well attended and included audience participation.

Teachers walking through the exhibit area couldn't help noticing the PTG display. An attractive booth, commercially made for RVP use, was strategically positioned to display PTG literature. But the biggest impact was made by the disassembled Steinway grand piano, furnished by Steinway & Sons and the local dealer, Fred Forshey. The plate and soundboard, vertically mounted on a pedestal, were on one side of the booth while the 7' case was sitting up on the other side. Arranged in between were the action, a grand action model, uncut pinblock, and a vertical strung back. Other action models were used to demonstrate mechanical functions, and a TV/VCR unit was used to show "The Unseen Artist" and two videos from National Piano Foundation, obtained by Jack Wyatt, Dallas Chapter.

At hourly drawings, teachers received miniature pianos with a red apple on top, reading "To My Teacher." And the Houston PTG Auxiliary provided loom-made yarn flowers, given to anyone who visited the booth. Both gifts were tagged, "Compliments of PTG [or] PTGA."

The booth was staffed by two teams per day, including twelve chapter members. They kept track of booth attendance and recorded 400 visitors—almost 10% of the entire convention registration!!

Chapter members were pleased with the success they had in reaching teachers and felt that their presence made an impact. They are enthusiastic about the next opportunity to educate teachers and the public about pianos and PTG. Anyone wishing more information about the Houston Chapter's experience can contact Martin Wisenbaker, RPT, for more details.

EVENTS CALENDAR

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 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.

September 24
Pomona Valley Annual Seminar
Clearmont Methodist Church
Contact: John Voss
2616 Mill Creek Road
Mentone, CA 92359
909-794-1559

October 6-9
Ohio State Conference
Cleveland, Ohio
Contact: Janet Leary
18817 Hilliard
Rocky River, Ohio 44116
216-331-5605

October 8
San Diego Annual One Day Seminar
Marina Village Conference Center
West Mission Bay, San Diego
Contact Dan Litwin
2701 Elyssee Street
San Diego, CA 92123
619-560-6105

October 13-16
New York State Conference
Sheraton Inn
Syracuse, NY
Contact: Paul Kupelian
PO Box 162
Constantia, NY 13044-0162
315-623-9484

October 27-30
Texas State Association
Sheraton Inn
Wichita Falls, TX
Contact: Dale Probst
4447 Cunningham
Wichita Falls, TX 76308
817-691-3682

October 29
Lehigh Valley One Day Seminar
Lehigh Valley Chapter
Holiday Inn
Contact John Zeiner, Jr.
830 Hanover Avenue
Allentown, PA 18103
610-437-1887

November 3-6
North Carolina Regional Conference
Radisson Hotel/High Point, NC
Contact: Evelyn Smith
1041 S. Aycock Street
Greensboro, NC 27403
919-230-1783

EXAMINATION & TEST STANDARDS COMMITTEE

Mitch Kiel, RPT

Movin' On Up

Welcome to the first installment of a new monthly *Journal* column, courtesy of the Examinations and Test Standards Committee. We'll be talking about the RPT exam — what it is, how to prepare for and pass it, and how it feels to take it.

Our goal is to encourage more Associates to take the RPT exam. Surveys tell us fear of the unknown is the number one reason Associates hesitate to challenge the RPT exam. We hope to remove that fear by letting a little light shine into the exam room.

There's lots of information available from PTG to help you learn the skills needed to pass the exam — the Tuning Exam Source Book, the Technical Exam Source Book, the new Written Exam Study Guide, the PACE checklist, years of *Journal* articles, the brand new reprint book of Rick Baldassin's "On Pitch" series on tuning (order yours from the Home Office today!), and tons of classes — as well as some very fine schools (consult "The Guide To Resources in Piano Technology," available from the Home Office) and private mentoring.

We hope this column's wide-perspective peek into the RPT exams will encourage more of you trepidatious Associates to gather up your courage, practice those skills, and stride boldly into the exam room, to emerge triumphant as RPTs!

The ETS committee invites your questions and comments. Send your comments to the ETS Commitee, c/o Home Office, 3930 Washington, Kansas City, MO 64111.

ETDs: Friend or Foe?

Associate member David Vanderhoofven wrote to the *Journal* with several questions. Even though David didn't ask about the exam specifically, he posed one question that speaks directly to a recurrent exam problem: Associates who tune electronically who fail the exam's aural portion.

David writes:

I've been a piano technician for barely a year, and an Associate member since February. Several tuners in my area learned the "old way," using a tuning fork only, and they look down on people who use electronic tuning devices.

Can a person tune a piano to sound good with an electronic tuning device?

Could a person tune a piano better by ear than by an electronic device?

I think an electronic device would help me by speeding me up and requiring me to make fewer decisions. Is that a good thing?

David Vanderhoofven
Joplin, MO

Mitch Kiel, ETS Chair, replies:

Those are great questions, David. You've touched on one of the most important and complicated issues piano tuners have faced in many years. A discussion of the electronic tuning device (sometimes abbreviated ETD) goes to the very heart of piano tuning because it forces us to confront the two faces of piano tuning: art and science.

Your old-timers' attitudes are understandable. Their information may be based on outdated ETDs like the Conn Strobe-O-Tuner. Their opinions may have been formed by listening to pianos tuned by inexperienced tuners who simply "bought the box" but had neither understanding of its proper use nor decent hammer technique.

I hope your old-timers don't really mean, "Life is too gol-dam easy nowadays. Why, when I was your age..." To that attitude, there's simply no response.

If a tuner already has the requisite skill and training, modern ETDs can help create an above-average tuning on most pianos. ETDs can contribute to making tuning easier and faster, which helps us do our best work on that fifth or sixth tuning late in the day. An ETD is particularly useful for recording a favorite tuning, pitch raising, tuning multiple pianos together, and tuning in noisy environments.

And its value as an aural learning tool is unparalleled: ETDs can be a big help to your mentor in teaching you to listen to unisons, stability, partials, temperment, and octaves. And they're a great self-teaching device. (More on this in a future column.)

However, I know many excellent tuners who totally reject ETDs. They believe ETDs will prevent you from ever obtaining an intuitive feel for hammer technique and a deep ability to listen to tone. They feel the disadvantages outweigh the advantages.

I disagree with my good friends who renounce ETDs. In my opinion, ETDs are just one more cool tool. The ability and self-discipline of the **operator** determines the benefit or the danger of an ETD. I agree that any powerful tool (for example, a tablesaw) can cause big problems if you're not careful (for example, cutting off your hand). I just think it's possible to learn to be careful if sufficiently motivated and educated.

I purchased an ETD a year ago, and I love it. I use it in my shop, my retail work, my concert work, as a CTE, and as a teaching tool (self-teaching, too). But I bless my lucky stars I knew how to tune aurally before I bought it. Without having first done so, I might not have understood how crucial aural skills are for those of us who use ETDs.

Dr. Al Sanderson, inventor and manufacturer of the popular Sanderson Accu-Tuner (SAT), also believes aural skills are an absolute necessity. "Piano tuning is primarily an aural profession, and should always remain so," he says.

PTG agrees. That's why PTG

bylaws require:

• All RPT exam master tunings are done aurally.

• To qualify for CTE training, you must score over 90 on each section of the tuning exam using aural methods only.

• An examinee's errors on the tuning exam are verified aurally before his or her score is calculated.

• All examinees who take the RPT exam with an ETD are also examined for aural ability.

Why do PTG and so many experienced tuners believe aural skills are so important?

• As wonderful as they may be, ETDs have limits. They're very good at examining tiny slices of a note, but would you read a novel with a microscope? ETDs that calculate 88-note tunings (such as the SAT) do so by making assumptions based on limited samples; those assumptions are not always optimal for every note on every piano in every situation.

• Numbers, shmumbers. An ETD is useful in direct proportion to its ability to mimic an aural tuning. Otherwise, it's just an expensive paperweight. **Electronic tuning is but a child of aural tuning.** And how can you properly raise that child unless you've become an adult?

• At the piano, a piano technician's primary responsibility is to make decisions. (Which partial is the loudest? Is the voicing appropriate for this room's acoustics? How much stretch can I get away with in this concert hall? Can I get this bass octave to sound any better?) As a beginner, your job is to learn to make those kinds of decisions quickly and easily. It's an ill-fated shortcut to abdicate that responsibility to a box. That would be like tuning with one ear tied behind your back.

• As Steinway & Sons states in their Technical Reference Manual: "Steinway & Sons stresses the importance of aural tuning. Developing piano tone is a mechanical and musical art. Solid aural tuning exercises and develops the musical ear, giving the technician a greater ability to master the methods used in tone building."

• Aural tuning is difficult, and you won't fully understand why you need aural skills until after you've acquired them. But after you've learned aural tuning, you'll have gained a deeper appreciation for the piano's complexity, and you'll have increased confidence to learn the other skills to become a well-rounded piano technician.

Well, David, I hope that answered your questions.

Here's a summary:

I like my ETD. I find it useful in many ways, and it's made my life a bit easier. It may be right for you too, someday. Some of my tuner friends believe it is not.

For you as a novice tuner, the downside of using an ETD is this: nowadays, they're so powerful and capable you might be tempted to neglect learning aural skills. That would be an unfortunate mistake. Aural skills are the foundation for all aspects of piano service.

I believe an ETD can be a useful addition to your toolbox. But unless you have aural skills too, an ETD can be just a crutch. Whether or not you ever buy one, learn to tune aurally. When you take the RPT exam, you'll be tested on your aural ability.

Good luck, and I look forward to seeing you in the exam room!

PASSAGES

Reclassifications to RPT

REGION 1

021-BOSTON, MA

DEBRA A. CYR
117 NONANTUM STREET, #2
BRIGHTON, MA 02135

040-NEWFOUNDLAND

KEVIN R. TUCKER
BOX 2168
130 ELIZABETH DRIVE
PARADISE, NF A1L 1E5
CANADA

059-QUEBEC

DANIELE BOLDUC
230 COTE DES FERMES
ST. JOSEPH, BCE, QC G0S 2V0
CANADA

101-NEW YORK CITY

SALVATORE TALIO
#3 WATSON STREET
CORTLANDT MANOR, NY 10566

REGION 2

335-SARASOTA-FT. MYERS, FL

ED MASHBURN
8991 SILKWOOD COURT
SARASOTA, FL 34238

REGION 4

601-CHICAGO, IL

MICHAEL C. GUTOWSKI
2577 W. MONTROSE, APT. 3
CHICAGO, IL 60618

REGION 5

585-NORTH DAKOTA

TIM GEINERT
525 3RD AVENUE, N.E.
JAMESTOWN, ND 58401

671-WICHITA, KS

FENGSHENG CHEN
1644 N. HILLSIDE
WICHITA, KS 67214

683-NEBRASKA

KIM A. NYGHT
903 E. 9TH STREET
ATLANTIC, IA 50022

REGION 6

917-POMONA VALLEY, CA

PHILIP B. GLENN
6600 ORANGETHORPE AVENUE
BUENA PARK, CA 90620

PTG

SHORT TAKES

PASSPORT TO EXCELLENCE PROGRAM IS STILL IN EXISTENCE!

Congratulations to Jack Wyatt, RPT, President of the Dallas Chapter, who completed the requirements in the Continuing Education Program for the Passport To Excellence certificate. Notice of Jack's progress was given in the South Central Regional meeting in Kansas City during the national convention.

Note:

During recent months there has been some confusion as to the continuation of the Passport To Excellence program in light of the successful direction of the *PACE* program. Verification of the time you have already put into collecting hours to qualify for a Passport To Excellence certificate is not futile. The program is still in existence, though outside the structure of a committee. Dissolving the Continuing Education Committee in no way deters the ongoing progress of the Passport To Excellence program. So, be diligent and pursue in getting that time codified in order to acquire the certificate.

The program will work in almost the same way as before. You can get your books from seminar chairmen and from the home office. When you complete your requirements, send your materials off to Home Office in Kansas City. As a safety measure, I will be acting to qualify the time and materials prior to approving the printing of your certificate. The time factor is the same: they are due by June 15 so adequate time is allowed prior to the annual convention for finishing it all up.

I look forward to having many of you RPTs complete what you have begun. If you have any questions or need any help, you may drop me a note or give me a call. Just look in the PTG Membership Directory.

Don Valley, RPT

SAN DIEGO CHAPTER MAKES CONTRIBUTION TO LOCAL SYMPHONY ORCHESTRA

Because of the successful and profitable one-day seminar with Bill Spurlock in October '92, it was suggested that a good way to spend some of that money would be to donate the parts and labor for new hammers, shanks and flanges for the orchestra's Steinway concert grand. Like most such organizations these days, they are experiencing financial problems and could not afford to fund the work. It was decided that Earl Kallberg, RPT, and the technician for the orchestra would do the work and that the project would be used as a learning experience for the interested Associate members in the chapter. In exchange for the donation, the chapter was given a large ad in the program for the '93/'94 season which read as follows: "The San Diego Symphony Orchestra Association gratefully acknowledges the gift of new hammers installed in the orchestra's Steinway concert grand piano by the San Diego chapter of the Piano Technicians Guild, Inc. By hiring a Registered Piano Technician you are assured the highest quality work available."

The chapter also received from the conductor, Yoav Talmi, a personal letter of gratitude for the chapter's contribution.

AUXILIARY MEMBERS BENEFIT FROM GENEROUS CONTRIBUTIONS

The following individuals (companies) donated $60.00 toward an Auxiliary registration for the 1995 convention. We extend our many thanks to them for all of the support we receive on this and other PTGA activities.

Dave Johnson/Schaff Piano Supply Company
Helen Hollingsworth

Steve Smith/Dampp-Chaser Electronics
Penny Goss

Webb Phillips/Webb Phillips & Associates
Hilda Acheson

Paul L. Jansen/Paul L. Jansen & Son, Inc.
Richard Schwinn

Ray Chandler/Kawai
Laura Bergantino

37th ANNUAL CONVENTION & TECHNICAL INSTITUTE

Highlights From New Horizons....

Most technicians, by nature, are a combination of science and art. Not a new theory—but none-the-less— consistent. So how does an organization representing this group offer all the necessary opportunities to expand horizons? It's called the annual convention and technical institute. And while *all* opportunities could not be offered—this year's gathering of over 850 technicians from nine different countries were offered more than ever.

As always, technicians found opportunities to renew old friendships, create new ones and purchase the latest or greatest in tools of the trade; but they also found brand new opportunities to explore. This year's Institute was packed with hands-on learning opportunities and offered new classes and subjects for every level of expertise. If a participant was looking to expand his/her knowledge base and reach beyond his/her own horizon, they didn't have to look too far. It was there.

The traditional Council Sessions led the week's activities and delegates brought chapter opinions and votes to the council floor. Elections of officers were held for the 1994-1995 term and a new Board of Directors was established. As always the pros and cons of each topic of discussion were presented and Council leaders guided delegates through the maze of topics and concerns.

Special recognition was given to Parliamentarian Ailsa Thompson for her outstanding dedication of 20 years of service to the Council.

The 1994-1995 Board of Directors:

(L to R) Row 1: Eugenia Carter, RPT/Southeast RVP; Michael Drost, RPT/Vice President; Leon Speir, RPT/President; Colette Collier, RPT/ Secretary-Treasurer; Row 2: Charles Erbsmehl, RPT/Northeast RVP; David Durben, RPT/ Central West RVP; Robert Johnson, RPT/South Central RVP; Robert Russell, RPT/Central East RVP; Fern Henry, RPT; Immediate Past President; Paul Monroe, RPT/Western RVP; Taylor Mackinnon, RPT/Pacific NW RVP.

The passing of the gavel

The Barbershop Singers

And, in keeping with tradition, conventioneers were able to participate in the Barbershop Chorus, witness the passing of the gavel, sample the wide variety of the very instrument which assembled them, and find ample opportunities to expand the horizons of learning and education through the exploration of both science and art.

Awards & Honors

Each year PTG honors those who have set high goals and achieved them, and those who have given years of time, energy and talent to make the organization grow. This year's list of honorees was, without exception, a fine representation of the multiple levels of talent and dedication which thrive in the heart of the Guild.

Member of Note Award
Four new names were added this year to the Member of Note category. They included: (Left photo) Bill Spurlock, RPT; Danny Boone, RPT; and the late Ray McCall. McCall's award was accepted by his wife, Ruth. (Right Photo) Nick Gravagne, RPT

Hall of Fame
Joining the ranks of the Hall of Fame were (Left Photo) Owen Jorgensen, RPT and (Right Photo) Roger Weisensteiner, RPT.

Special Presidential Awards
President Fern Henry offered special recognition to: Ben McKlveen for outstanding service as Institute Director for 5 past technical institutes (Left Photo); Rick Baldassin for his contributions as past tuning editor for the *Journal* (Center Photo); and to Jim Harvey (not pictured) for his work as technical editor for the *Journal*.

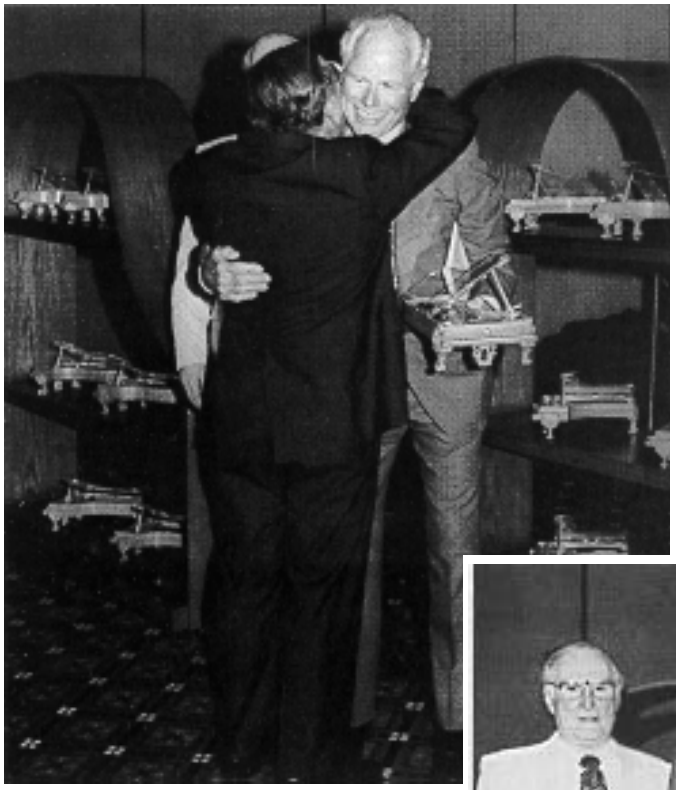
Presidential Citation
President Henry also gave a Presidential Citation to Keith Bowman for his dedication and service on the Marketing Committee. (Top Right Photo)

Chapter Achievement Awards
Chapter awards were given to: Category I/ South Central PA (Accepted by Keith Bowman-Right in Photo); Category II/ Waukegan (Accepted by Richard Schwinn-Center in photo); Category III/San Francisco (Accepted by Michael Kimbell-Left in photo).
See complete story on page 38 of PTG*Review*.

Chapter Newsletter Awards
Newsletter Editors were recognized for their best efforts and this year's results were: 1st Place: *Valley Technician*/Sacramento Valley Chapter, Mark Stivers, Editor (Accepted by San French-Left in photo) 2nd Place: *Vancouver Beat*/Vancouver BC Chapter, Paul Brown, Editor (Right in Photo) 3rd Place: *Partial Post*/Waukegan Chapter, Richard Schwinn, Editor (Center in Photo)

Examiner of the Year
Michael Carraher (Left Photo) was given this year's Examiner of the Year award for the past year's contributions to the examination and testing program.

...and the Golden Hammer goes to...



Norman Neblett, RPT, received the Guild's most coveted honor this year as Ben McKlveen introduced the Golden Hammer winner. In a special presentation organized by Wendell Eaton, PTG Foundation and PTG Home Office, past Golden Hammers were displayed at the PTG Museum as well as during the Golden Hammer Banquet. Norman Neblett accepts a congratulatory hug from Wendell Eaton (Left Photo); those past Golden Hammer winners who were present at the Banquet are pictured below. They include (L to R): Ben McKlveen, Norman Neblett, Wendell Eaton, Richard Bittinger, Willis Snyder, Ernie Juhn and LaRoy Edwards.

Retiring from service as Regional Vice Presidents were (Left Photo) Jim Coleman, Jr/Western RVP and (Right Photo) James Birch/Northeast RVP. President Fern Henry recognizes their contributions and years of service and commitment to the Guild.

Hand-O
And Lots Of
To Expe
Educationa

Class Reviews From

Don Valley, RPT

For those of you who are into the pinblock replacement techniques, Andre Bolduc of the Quebec chapter proceeded step-by-step through installation of the upright block. When you understand sensible procedures such as this, it is not such a scary job to tackle. Then those who were in attendance in this class understood the factors of a certain block construction that failed, requiring replacement in a two-year-old grand!! Proper technology would have prevented this and scores of other pianos from needing this repair. Now we, who were in class, know.

Danny Boone in a class on vertical hammer installation paced through a plan of checks and balances necessary prior to actual installation of damper felt without which the technician is not guaranteed effective efficient results of the job once it is done. No need to even think of performing such a task without first taking care of advanced prep.

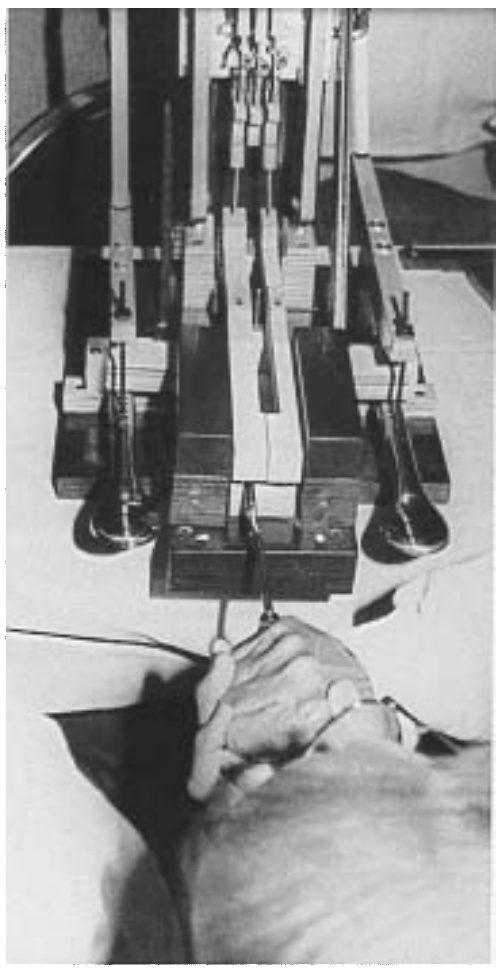
Have we been wrong for all this time? David Stanwood thinks so when it comes to our judgment of the effect of the standard way we progress through determining touch weight when it really does not produce the natural playing approach to the keyboard. His recently discovered theory more accurately results in a final determination of predictable weight. I wish you had been there to take advantage of this knowledge.

The resultant effect of new hammers has been a long-time mystery to many technicians, who, because of fear of not knowing how to voice, order a set of new hammers of the best quality obtainable, install them, and hope that is the end. According to Wally Brooks of the Connecticut chapter, that is only the beginning as he

Joe Garrett—*Setting Up Shop*

stitute Director Steve Brady addresses the Institute structors.

Hammer Filing and Upright Shank Replacement—Taught by Margie Williams



n Classes Opportunity nd Your l Horizons

Richard Elrod—*Regulating the Vertical Action and Keys*

Kathy Smith and David Vanderlip—*Grand Action Regulation*

Norman Neblett and Nick Gravagne—*Getting The Most Out Of A Grand Piano*

peals his knowledge steadily through this class on "Tone Building the Hammers." The mystery is dissolved to a great extent when you understand the various hammer zones, what they produce, and how to use needling to change these zones to respond as they should, coming up with the optimum tone that is balanced throughout the scale. Are you still mystified? Not those who were in this class.

Over the years we have had many classes that covered techniques of hammer boring. "Not Just Another Hammer Boring Class" by Glen Hart detailed many needs for boring your own hammers. It is not a difficult procedure, even though it is necessarily very specific to the extent that even one degree can make the difference. The proper tools are more simple and less costly than you would think. It is this kind of a class that gives you the courage and confidence to get started. Had you been in KC, by the time you read this, you could be boring your own hammers.

Chris Robinson, Connecticut Chapter, in his Soundboard Installation class helped the class to realize the difference between the current problem of soundboard compression ridges and those of many years ago still without this occurrence. We are, no doubt, better controlled today than ever before as far as shop environment and individual control units within our shops. So, why this situation? Is it conditions of materials supplied to us? Is it some change we have adopted in preparation of the product? Well, this was explained very well as to the reason this has begun to happen recently and the manner of taking control of it. Perhaps he will do this class again next year in Albuquerque.

Chris Robinson and Rick Baldassin—Renner USA

Voicing the Renner Hammer, taught by Rick Baldassin of Utah, was a class full of exacting procedures as to the when, the where, and the how in order to get desired results. Straightforward in design, the demonstrations were very evident to anyone who could hear deviations in tonal qualities. Of course, every piano technician has this ability, but you cannot hear it unless you are present—needless to say. Overlooking the fact that we have other voicing matters to take care of prior to voicing the hammer is fault of many who do not even realize it because they have not been to these types of classes. Attacking a hammer to take care of tonal problems not caused by the hammer is of no effect. The difference is basic and easily identifiable once you are aware of the facts. This makes the difference, in many cases, between the satisfied client as opposed to the disgruntled client.

Whole sets of new keys — no, not keytops — new keys!! But there's more: New Key Frames! Kluge, manufacturer of keys, from Germany and represented in this class by Joel and Priscilla Rappaport as well as H.G. Narath from Kluge in Germany, has been coming to conventions for a few years. This class is the first of its kind. So, it can really be done, folks. Maybe they will be in Albuquerque next July, also. If so, you will find this to be a very informative class providing the possibility of very profitable results.

How pliable is ivory? When you see ivory tails braided and tied in knots, you will understand. William Smith of the Seattle Chapter has been restoring ivory keytops for many years. If you have no knowledge on this ever-recurring need, this class provided in-depth instruction on selection, fitting, trimming, bleaching, and overall preparation. Do you know what to do about those tops you can see through even after they are applied and polished? Well, he even "covered" that one.

Retrofitting the Grand Action with new parts, yet keeping the old frame, has created big headaches for many technicians who have purchased the correct parts for replacement, put them all where and how they belong, and still come up with an unplayable action. Rick Baldassin and Chris Robinson teamed up in teaching this class. Picking the correct parts and using a universal replacement wippen is the key, but where can you get them, how do you determine the exact item and when do you change? Well, you could know, and maybe you do.

Tool Sharpening-Resurrecting A Cutting Edge, was taught by Kevin and Janet Leary and it mostly pertained to the chisel. What a thorough and exacting approach to this matter. There certainly is a lot more to it all than sticking a chisel on a coarse grinding wheel to come up with an edge of some sort. Discussion and demonstration of materials and techniques for the "proper" edge for the specific tool gave practical insight into this facet of our work. Do you know the reason one must sharpen a chisel with a different type of edge than a kitchen knife? If you don't, you may not be able to cut your bread, even though the edge is very sharp.

A different, but very much needed subject was covered by Ken Sloane of Cleveland. One might not realize the unique importance of being exact with the checking area in the grand piano. This is an area about which not much is said. Well, here it was all laid out before us. Of course we realize the need for repetition, but we do not even need the backcheck to get repetition. So what's the big deal over contour, size, shape, material, and all that stuff? Well, you'll find out one way or the other. Maybe in Albuquerque?

Vertical Dampers can't be that complicated, can they? Well, no, not the dampers themselves, but all those complications that happen because of misfit, misalignment, travel, and other factors. Danny Boone made it very plain as to advanced preparations necessary before working on the damper itself. Good dampers won't work on poor workmanship!!

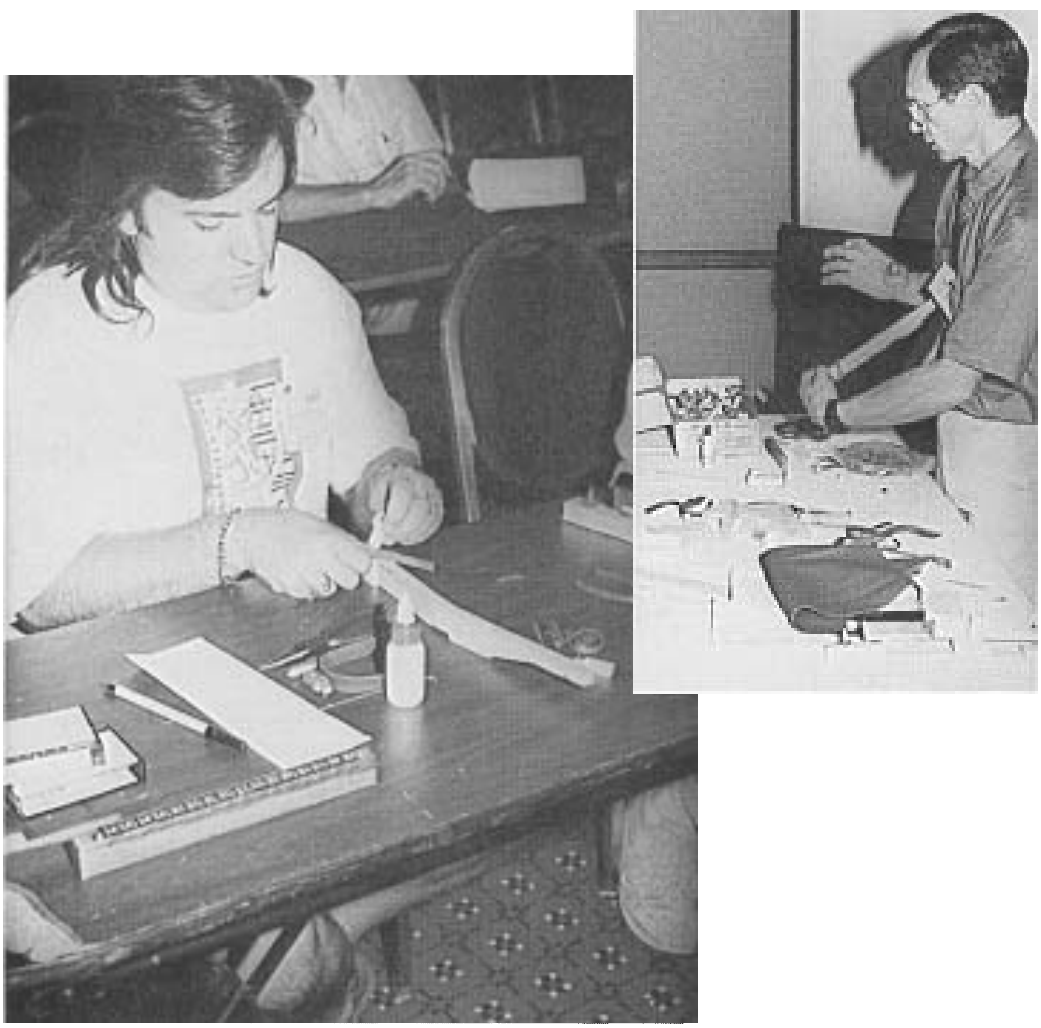
These are some of the highlights among the myriad of classes offered. If you did not go, you really missed out on a great one. Steve Brady put together a conference with practical take-home knowledge for everyone!

Now when it comes to Cultivating Artisans, the emphasis on strengthening the quality of basic skills and knowledge was in that sector of classes introduced this year pointing up the *PACE* program of progress. Classes were given on preparing for the written exam, on preparing for the technical exam, and preparing for the tuning exam. There were technical hands-on classes that emphasized specific areas of the skills tested in the technical exam. There were hands-on sessions on various areas of tuning technology—even a simulated tuning exam. No one, *absolutely no one,* can now say PTG does not offer adequate training to make a proposed examinee familiar with what is expected on exams in order to become an RPT. There simply is no excuse.

For those who are developing advanced skills, there were hands-on classes in such areas as bridge capping, voicing techniques, chisel sharpening, and grand hammer technology.

Several mini-technicals topped off the class offerings, making this—in my opinion—the most well spread menu of classes provided in twenty or more years!! If you were not there, start preparing now for Albuquerque in July 1995. Maybe you can catch up there.

Eric Schandall—*Voicing Techniques That Work*



Bushing and Pinning Skills—Taught by Bill Spurlock

Class Reviews Continue

Paul Revenko-Jones, RPT

All About Plates/Bob Beck

Piano plates, those large, heavy, cumbersome and above all, respected parts of pianos (at least they had better be), were the subject of Bob Beck's fine overview of sandcast foundering. With a brief history of plate making, and an all-too-brief glimpse of the general process of sandcasting metals (just another complex area of investigation for us technicians to take on), we were then led by a very impressive slide show and explanation, through the entire making of cast iron plates from completed pattern to finished product. If, as usual, I am awed by the structure of pianos in general, I am much further awed by the very ancient arts of metal casting, the temperatures of molten metal in transition, the absolute delicacy of pouring 3300-degree iron so that there are no faults, seams, or fissures. And the weight of it all! These folks handle piano plates like we handle keysticks. This is a class that should be given again if possible, as often as possible. With the development of vacuum processes for plate casting, and the economics of sandcasting, this may be a quickly disappearing art. Bob also gave some time, not enough, to repairing cast iron with welds. This should be another entire class, it would be worth it—particularly if Bob taught it.

Dynamic Soundboard Installation/Chris Robinson

Tractrix of Huygens? Apices of radii? Foil-shaped ribs? Involutes of catenary curves? Come on, it's just a vibrating plate isn't it? Isn't it? Well, yes and no, if you attended Chris Robinson's class on soundboard design and installation. This class was far too

short for the importance of the topic and its complexity, and for the stature of its teacher. Chris did something I have not seen in a class yet; he admitted that there has been a major problem in soundboard construction in general and specifically in his shop, and went into great detail about his solutions to the problem, something perhaps we need to hear from other major users and makers of soundboards — particularly with an eye to compression ridges and cracking. While it seems to be a global phenomenon, Chris attacked it in his shop by submitting to (and paying well for) specific criticism from unbiased sources. He admits that the results are yet to be confirmed. The remainder of the class was spent in discussion of the design elements of the soundboard which Chris is making now; a non-crowned rib pressed into a "shoe" designed more like a foil or wing cross-section so that string bearing is more nearly directly down through the bridge to the now offset apex of the rib (with a fudge toward the bass bridge in that area—Chris admits in a later phone conversation). Part of the theoretical foundation of this design is quite old and may have been used by other piano makers at one time, either by design or accident. The mathematics was available, just as it is now if one asks the right questions. Chris then took the class through a well-structured slide presentation of manufacture and installation in his shop. This class was far too short to do the subject justice.

Antique Piano Restoration and Harpsichord Maintenance and Repair/Ed Swenson & Michael Reiter

These two classes were, intentionally or not, appropriately timed and placed one after the other, and nicely inter-related. The parts and nomenclature for older instruments is quite different and both instructors did a fine job of providing explanatory material, slides, videos, as well as tangible examples of these sometimes arcane parts. While comparatively few of us work on antique instruments or harpsichords (not to be confused with antique instruments), many of the working principles are the same. While the venues for "ancient music" and harpsichord recital are certainly rarer, these classes provide good foundations for an understanding of these areas. What we consider modern now will soon be antique, and the generational passage of these methodologies and approaches will need to be more commonly understood.

Everyday Voicing—Taught by Bob Davis and Dale Erwin

David and Willis Snyder—*Grand Hammer Technology*

Complete New Keys with Original or New Frame—Joel & Priscilla Rappaport

Ins and Outs of Piano Wire/Ray Chandler

If you want to know why piano wire breaks, this class covers the spectrum of causes, the primary one being the tuner. While this violates the age-old maxim that tuners don't break strings, strings just break; if you don't know how piano wire works, what the characteristics of the bearing structure are, and common defects in construction, then you, the tuner, will indeed continue to break strings. This class brought a massive amount of technology to bear on a single aspect of the piano—the string. As in all well-taught classes, there was ample time for an exchange of information from all sides. This class ought to be taught regularly.

5-Ply Hardrock Pinblock Design and Installation/Andre Bolduc

While avoiding the common mistake of self-serving manufacturers who use classes to sell their products, Andre successfully guided the class through a combination of historical and technical reasoning to the design of the block bearing his name. This involved a well-structured demonstration with examples of the development of modern pinblock materials, particularly with an eye on the end/edge grain characteristics as well as flat-sawn/quarter-sawn sandwich constructions of a variety of different blocks. Further discussion covered fitting the block and securing it in place (dowel placement), glue characteristics (from thermoplastics to resorcinols), and the entire force structure of the block bearing on the plate and plate structure. A most convincing and well reasoned class from a master of wood.

The classes and description illustrated here are just a handful of all of the choices and opportunity that was made available during the 37th Annual Technical Institute.

Following Opening Assembly, the PTG Past Presidentswho were attending the convention opened the exhibit hall by cutting the ribbon. Past Presidents pictured above are (L - R): Don Morton, Ron Berry, Sid Stone, Ernest Preuitt, F.M. "Kelly" Ward, Charles Huether, Marshall Hawkins, Nolan Zeringue and cutting the ribbon, Wendell Eaton.

Renner USA

Schaff Piano Supply

McCall Enterprises

Exhibits Galore on the Showroom Floor

The class structure of the institute provides plenty of space during the course of the day to take advantage of the exhibits. A lot of learning and awareness takes place in those corridors. This is where the technician can take the time to judge the quality of the products used in the trade as well as those items called pianos. This year seemed to display many more pianos than in prior years. Our ongoing and lasting friends were all displaying some of their finest examples of their latest technology. I speak of names such as Kawai, Baldwin, Young Chang, Charles Walter, Steinway & Sons, Kimball, Yamaha, Samick and Wurlitzer. More recent inclusions were Weber, Fandrich, Boston, Mason & Hamlin, Schimmel, Hastings, Sykes Piano Imports, Nakamichi and Fazioli.

That was only to mention the piano manufacturers. New to the rebuilding display this year was Ralph Onesti Piano Restorations of the Philadelphia area. Then the never-ending displays of suppliers for tools and materials lined the corridors. Each year they seem to get more expansive and more impressive in the layout of their displays. We owe a lot to our suppliers and it is here with the big ones you can see and feel virtually every type of tool and product pictured in their catalogs. American Piano Supply, Pianotek and Schaff are very large. Small suppliers with emphasis that is more specialized and less general were Brooks, Ltd., Dampp-Chaser, Dryburgh Adhesives, Hart's Piano Shop, McCall Enterprises, Paul Jansen, Renner, Spurlock Specialty Tools, and Webb Phillips & Associates. It took many times wandering the exhibit hall to take it all in. This truly was an example of Expanding Horizons.

Many Thanks To Our Many Exhibitors!

- American Piano Supply
- Best Piano Services
- Brooks, Ltd.
- Brookside Press
- Coast Wholesale/Hasting Pianos
- Coleman & Sons
- Cory Instrument Products
- Dampp-Chaser Electronics Corporation
- Dryburgh Adhesives
- Fandrich Design
- Hart's Piano Shop
- Hudson Valley Keyboard Craft
- International Brokers, Inc.
- Inventronics, Inc. Fazioli Pianos
- Jordan's Organizers
- Hermann Kluge & Co.
- McCall Enterprises
- Pacific Piano Supply
- Paul L. Jansen & Son
- Pianotek Supply Company
- Potter, Leonard & Cahan Insurance
- Ralph J. Onesti Piano Restorations
- Randy Potter School of Piano Technology
- Renner USA
- Reyburn Piano Service
- Schaff Piano Supply Co.
- Score Chapter 19/SBA
- Spurlock Specialty Tools
- Pianomation by QRS
- Webb Phillips
- WonderWand

Best Piano Services

Dampp-Chaser Electronics

American Piano Supply

Jordan's Organizers

Pacific Piano Supply

Cory Keyboard Products

Coleman & Sons

Ralph J. Onesti Piano Restorations

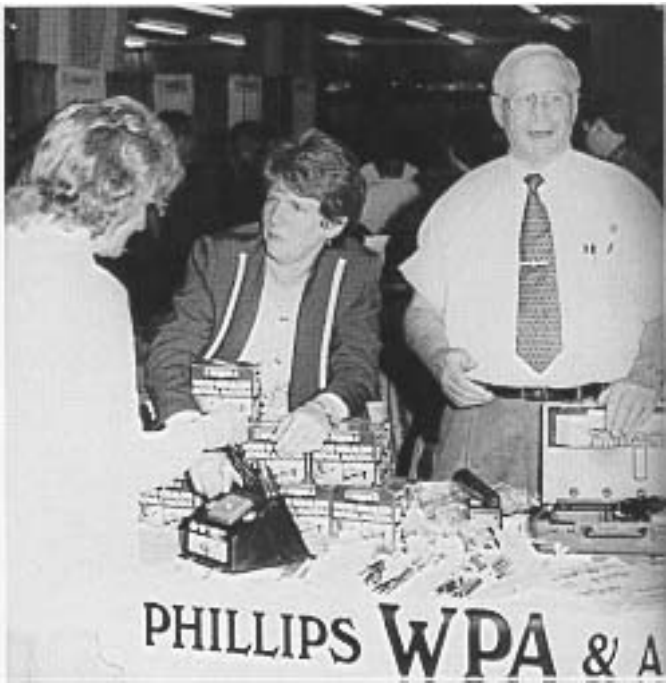
Pianomation by QRS

Randy Potter School
Of Piano Technology

Brooks, Ltd.

Paul L. Jansen & Son/Artist Benches

Reybum Piano Service



Webb Phillips & Associates

Additional information about the exhibits and piano manufacturers will appear in an upcoming issue of the *Journal.*

WonderWand

Fandrich Piano Company

Inventronics, Inc.

A special thank you to all the piano manufacturers who participated in this year's exhibit hall!

- Baldwin Piano & Organ
- Boston Piano Company
- Fandrich Piano Company
- Fazioli
- Hastings Piano Company
- Kawai America
- Kimball Piano Company
- Mason & Hamlin Companies
- Nakamichi
- PianoDisc
- Samick Music Corporation
- Schimmel Piano Company
- Steinway & Sons
- Story & Clark
- Syckes Piano Imports
- Walter Piano Company
- Weber Piano Company
- Wurlitzer Piano & Organ
- Yamaha Corporation of America
- Young Chang America

Foundation Activities At Convention

The Piano Technicians Guild Museum and Archives made its debut at the 37th Annual Convention. Foundation President Bruce Domfeld welcomed sightseers during two full days of tours of the Home Office facilities and museum. On display in the museum were many historical archives from PTG years past, tools and special collections from donations made to the museum and a specially arranged display of many of the Golden Hammers which were all handmade by Bill Smith. Technicians witnessed the preservation of their profession's past and the investment in its future.

Foundation President Bruce Domfeld (L) and Golden Hammer creator Bill Smith enjoy the special Golden Hammer display at the PTG Museum and Archives.

(L) Conventioneers toured the Home Office and participated in the opening of the Piano Technicians Guild Museum and Archives. Special display cases, made by Kimball, held volumes of PTG history and collections.

(R) PTG Foundation President Bruce Domfeld passes the foundation gavel to newly elected President Roger Weisensteiner.

(C) The 1994-95 Foundation Board of Directors (L to R): Nolan Zeringue, Charles Huether, Colette Collier, Ernest Preuitt, Paul Monachino, Roger Weisensteiner, Pauline Miller and Larry Goldsmith.

(L) Auxiliary Board of Directors: Phyllis Tremper, President; Paul Cook, Vice President; Judy Rose White, Corresponding Secretary; and Sue Speir, Treasurer meet to review the issues that will go before the Auxiliary Council.
(R) PTGA Scholarship winners, (L) Sou-Tin Chen and (R) Melanie Hadley

PTG Auxiliary opening assembly. A welcome by President Tremper and a overview of the week's activities.

The PTG Auxiliary

So, To Wrap It All Up

You had the movers...

Father and Son (David and Jim Geiger) keep on truckin'

(L and Top) Moving crew Paul & Kim Niehaus and Institute Assistant Director Paul Olsen.

Moving crew David Geiger and Tim Rainwater.

The Shakers...

Steinway & Sons duo concert pianists, Martin Perry & Kathryn Lewis practice for the Saturday evening concert which followed the Golden Hammer Banquet.

The Symposium Makers...

(Left Photo) L-R: Jack Wyatt, Piano Technician and dealer; PTG President Fern Henry; National Piano Foundation's Brenda Dillon and Lloyd Meyer, Mason & Hamlin Companies/Renner USA lead the Industry Roundtable discussion, *"Where Do We Go From Here?"*

(Below) Institute Symposium speakers (l-R) Owen Jorgensen, Michael Kimbell and Virgil Smith debate: *"Temperamental Tuners: The Relative Merits of Equal and Historical Temperaments In Modern Tuning Practice.*

...And Of Course—

The Keyboard Takers!!!

New Members In July

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MALDEN, MA 02148

062-TORONTO, ON

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KEMPTVILLE, ON K0G 1J0
CANADA

078-NEW JERSEY

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6 TOWPATH APTS.
HACKETTSTOWN, NJ 07840

111-LONG ISLAND-NASSAU, NY

JOAN A. SCHWARTZ
2363 GRAND AVE., #7B3
BALDWIN, NY 11510

191-PHILADELPHIA, PA

DAVID G. VILLANUEVA
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SPRINGFIELD, PA 19064

REGION 2

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THOMAS A. HAMES
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GAFFNEY, SC 29340

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771-HOUSTON, TX

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LEAGUE CITY, TX 77573

791-NORTHWEST TEXAS

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MIDLAND, TX 79703

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LEVELLAND, TX 79336

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612-QUAD CITIES, IL

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BELLEVUE, IA 52031

REGION 5

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MARK CRAMER
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BRANDON, MB R7A 3T1
CANADA

641-KANSAS CITY, MO

JOHN M. EVERMAN
5475 WESTGALE ROAD
SMITHVILLE, MO 64089

671-WICHITA, KS

ANN C. FELL
RT. 1, BOX 273
WINFIELD, KS 67156

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5341 N. PASEO DE LA PEREZA
TUCSON, AZ 85715

905-SOUTH BAY, CA

PAUL S. DONN
3256 RANSON STREET
LONG BEACH, CA 90804

956-SACRAMENTO VALLEY, CA

RAYMOND J. BARLOW
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SACRAMENTO, CA 95823

AHMET H. IBRAHIM
3143 REDWOOD DRIVE
FAIRFIELD, CA 94533

ROB M. LEE
P. O. BOX 120
COLFAX, CA 95713

968-HAWAII

RONALD SUGA
P. O. BOX 96
WAIMEA KAUAI, HI 96796

REGION 7

972-PORTLAND, OR

KIRTLEY W. BURGGRAF
BOX 9023
PORTLAND, OR 97207

PTG Foundation
Mission Statement

"The Piano Technicians Guild Foundation is formed to support the goals of PTG by preserving and displaying historical materials and providing scholarships and grants for piano performance, study and research."

Foundation Spotlight

Members Of The Piano Technicians Guild Friends/Supporters of the PTG Foundation

We have just completed a great convention in Kansas City and the Foundation's opening of the Museum was a huge success. Major undertakings of this proportion are truly rewarding when the mission is complete.

For those of you in attendance who had an opportunity to tour our new museum, I'm sure you were as impressed as I was with the depth and scope of the information displayed—the tools, manuscripts, books, and the special antique piano—but one of the high points has to be the collection of golden hammers. Not only are these great works of art by Bill Smith, their creator, but you must put in perspective each of those individuals that truly gave of himself to make our organization grow.

This year's nominee has been, as stated by Ben McKlveen, a giant in our industry. Norman Neblett's 40 years of dedication and service are unsurpassed.

On behalf of the Foundation officers and Board we would like to thank past president Fern Henry, the PTG Board, Larry Goldsmith and the Home Office staff, Fred Odenheimer, Ernie Preuitt, the piano manufacturers and supply houses. Wendell Eaton and past president of the Foundation, Bruce Dornfeld, for all their extra efforts.

Roger H. Weisensteiner
PTG Foundation President

Contributions To PTG Foundation....

The PTG Foundation has taken on the challenge of accumulating an archive of materials in piano technology, as well as a facility in which those materials can be displayed and used. If you have historical materials that you would like to donate to the Foundation, please contact Roger Weisensteiner, RPT, P.O. Box 432, French Lick, IN 47432.

If you wish to support this important effort financially, please send your contributions to the Piano Technicians Guild Foundation, 3930 Washington, Kansas City, MO 64111-2963.

PTG Marketing Tools

Brochures:

- How should I take care for my piano?
- How often should my piano be serviced?
- Special care and maintenance of the teaching piano.

50/$20, 100/$35, 500/$150

Technical Bulletins:

- Pitch Raising
- Regulation
- Humidity Control
- Voicing
- Finish Care
- Rebuilding

50/$12, 100/$20, 500/$90

Educational Materials

- PTG Technical Exam Source Book
- PTG Tuning Exam Source book

$29 each

Merchandise

- Journal Binders

1/$6.50, 2/$12

- Membership Lapel Pin *

$5.00

- Coffee Mug

1/$4.00, 4/$13.00, 6/$22.00

- Pedestal Mug-10 Oz. clear

$1/$5.00, 4/$16.00, 6/$22.00

We have sample packets for $3.00 each.
Packet includes one each of the bulletins, brochures, reminder cards, and a variety of sample available.

**RPTs Only*

To place your order for any of these items call 816-753-7747

Reminder cards or Business cards also available from PTG

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Sponsored by the CLEVELAND CHAPTER - PIANO TECHNICIANS GUILD

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October 6-9, 1994

Comprehensive Class Subjects	Exhibitors	College & University Program
Mini Techs	Panel of Experts Forum	Extensive Auxiliary Program
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- *Hands-On Vertical Hammer & Damper Replacement*
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Inventronics' Dr. Albert Sanderson
- *Baldassin/Sanderson Aural Temperament*

Willis and David Snyder
- *Grand Action Restoration, Reg., Reconditioning, Repairs, Geometry Corrections, Limitations*

Steinway & Sons' Scott Jones
- *Voicing the New York Steinway Hammer*

Brooks Ltd.'s Wally Brooks
- *Grand Action Rebuilding for Fun and Profit*
- *Rebuilding Business: Estimates/Contracts/Appraisals*

Michael Wathen
- *Tuning Exam Preparation*

Franklin International's Hugh Evans
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AUXILIARY EXCHANGE

Dedicated To Auxiliary News and Interests

Just Say YES!—Pitch In & Help....

September is "Back to School" month. This brings to mind an ongoing situation in which we, as PTGA members, should become involved in a positive way.

As you know, many schools are having a difficult time these days meeting their budgets. It seems that one popular place to cut services and save a buck is in the music department. Several of you have told me of petitions and letters and meetings that you have worked on to reverse this trend, or at least stave it off. I am asking the rest of you to "Just Say YES," pitch in and help. If you are not part of the solution, you are part of the problem! As a member of the PTGA, here are some things that you can do to help (in order of impact):

1. Appear at school board meetings when the school board is considering its budgets, and participate in the public input. Bring lots of friends to do likewise.

2. Write custom letters to the school board, and have your friends do the same. Suggestion: give your friends sample topics or paragraphs to use in their letters. Giving them samples will make it easier for them to participate, and you will be more effective by sending more letters.

3. Prepare a petition and circulate it for multiple signatures. Standing in front of the supermarket or post office are the easiest places to collect signatures. The format can be a door to door. Enlist the help of others in collecting signatures. The format can be a simple statement, e.g., that you wish to have the school board reinstate or preserve the Music program for another year, and simply have the people sign and print their names underneath, with a date. Then turn this in at the school board meeting during the public comment time when they are discussing budgets.

4. Gain support from City Council members, your state senator or assemblyman. Have them write letters to your school board as well.

Share your successes and examples with us. Let us know how the battle is coming. But "Just Say YES" and participate.

Next month will be the kick-off for the new "Auxiliary Scholarship Store." We will start with a holiday sale on a selection of piano related items. Orders must be submitted by the end of November to ensure delivery by holiday time. Please consider purchasing your holiday gifts, or your spouse's customer holiday gifts through the new Scholarship store, and support the Guild in a meaningful way. Remember, the scholarships are given in the name of the Guild, with the express purpose of promoting piano music and piano tuning by Guild members. Watch for our new ad on these pages next month.

Cookbooks and other old unsold items from prior fundraising efforts will be coming your way soon. I need each of you to "Just Say YES" and commit to selling only two cookbooks. Should you decide to say "No," simply return them to me and I will personally pay for the return postage. By getting the cookbooks out, many hands will make light work of a big job, and before the holiday season, all the cookbooks will be gone, once and for all. Then we can move on to bigger and better things. "Just Say YES!"

September is also the time when the pre-convention planning meeting occurs in the city where the next convention will be held. The next

convention is in Albuquerque, New Mexico. I will represent your interests on that board, as a voting member. Both Sue Speir and Debbie Johnson plan to attend and assist me in developing the program for next year. My wife, Claudia, will also be there. A number of you have been kind enough to fill out the "feedback forms" that we handed out on this year's tour. We wanted to learn from this year's convention. We want to plan an even better event for next year. Thank you for your input—it helps.

Also, the 1995 PTG Convention will be a very exciting time because it will be an international event. The IAPBT (International Association of Piano Builders and Tuners) will be joining us in Albuquerque this year. This will bring international tuners, teachers, and of course, their spouses. You will find this to be a unique opportunity for you to make new friends from around the world. Make your plans early. We'll have "more fun for everyone!"

L. Paul Cook
President

...Introducing: *Recording Secretary/Shirley Erbsmehl*

Although I have not been a dues-paying, card-carrying member of PTGA until recently, I am really not a newcomer to the organization and its activities. It has always been my policy not to join an organization unless I could actively participate and so although I have attended many seminars and conventions over the past twenty plus years, I did not "join" until three years ago, following my retirement from a full-time teaching career.

That is where I am today and as your newly-elected recording secretary, I am delighted to be working with people especially excited about PTG and particularly about PTGA.

I was a full-time working wife and mother when "working mothers" were an exception rather than the norm and so I have often been seen as a "women's-libber" because I have and still do support the right and responsibilities of women. I am not afraid of hard work—physical or mental— and I am eager to try new activities. I have a new computer that is getting a workout and have renewed piano lessons that were given up years ago. By the time you read this, I will have taken a hot air balloon ride with a friend, and last winter on vacation, I went snorkeling in the ocean for the first time. I even got my husband to go with me and we both agreed it was like being dropped into an aquarium!! I guess you could say I am living each day to the fullest—so little time and so much to do.

I have been a legal secretary (which helped pay my way through college) and a public school elementary teacher. After retiring from nearly thirty-three years of teaching, I was hired by State University of New York at Fredonia to supervise seniors in their student teaching experience. I retired again last December and now delight in being totally free for hobbies and interest which have been on the back-burner for many years. Reading, especially mysteries, sewing (most of my wardrobe, my daughter's and granddaughter's wardrobes, quilts, drapes, toys—you name it, I'll sew it), church work (chairperson of Christian Education Ministries in First United Methodist Church, substitute Sunday school teacher, fund-raisers, choir and so on), gardening and I am just starting to pursue a creative writing interest I have always had.

What shapes a person's life and gives it meaning is people and for me the focal point of my life is my husband of almost thirty-eight years. Many of you know Chuck and his keen sense of humor; that and the respectful way he treats everyone tells you why he is the finest man I know. We met while attending SUNY/Fredonia and it was a whirlwind courtship, followed by marriage which we were told would never last! We were blessed with the birth of a daughter, Barbara, 35 years ago and our family now includes son-in-law, Don, and grandchildren, Andy, 11 and Emily, eight. We returned to Fredonia, NY, from Clarence, a suburb of Buffalo, NY four years ago after having our dream house built. Our intent was to be nearer to our family so we could share in seeing the children in school programs, go to church together and all the little things that add up to quality family life. It is a move we have not regretted. Actually, we have returned to the place where we met, fell in love and had our first home.

I am proud of my husband, his work and talents, and am pleased to be working with an organization that supports what is important to him just as he always gives me support and encouragement in all the activities I pursue.

Shirley Erbsmehl
Recording Secretary

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DISPLAY AD INDEX

PianoDisc™ Discussions

News From The World Of PianoDisc

Floyd Cramer records for PianoDisc

Famed country artist Floyd Cramer recently completed two days of recordings for the PianoDisc Music Library. "He says he had a wonderful time, and the performances were exemplary", says Steve Merritt, Media Relations Director and Talent Booking coordinator. "Some of these performances are truly memorable, and we are looking forward to sharing them with the world very soon."

Mr. Cramer recorded one full hour of solo piano which will be released soon in the PianoDisc Music Library Artist Series, both as a 3.5" diskette (compatible with all PianoDisc control boxes) and in PianoDisc's new PianoCD™ format. Also, Mr. Cramer recorded several songs which he performed with a 18 piece orchestra and 8 voice backup chorus, and these perfomances will be released in the PianoCD™ format, as well as on two spectacular PianoVideo™ tapes (see "What is MuSync™?", right).

All of Floyd Cramer's PianoDisc performances will be available in the fall.

New PianoDisc music diskettes available this fall

A live jazz trio, a Steinway Artist recital and two different Gershwin releases top the list of PianoDisc Music Library additions for Fall, 1994. Also on tap are Artist Series performances by Nashville giant Floyd Cramer (see above) and "A Prairie Home Companion" stride artist Butch Thompson.

The Steinway Artist Series continues to grow with the addition of West Coast favorite Laura Spitzer's PianoDisc Grand Opening Recital diskette. Ms. Spitzer's fiery performances of the Chopin "Heroic" Polonaise and of Mily Balakirev's daunting "Islamey" were highlights of PianoDisc's Grand Opening festivities last fall, and this release offers a glimpse into the excitement of that day. The diskette includes works by Mozart, Chopin, Joplin and Gershwin performed during the Grand Opening recital.

Gershwin is also the focus of two other new releases, one for piano solo and the other with Symphony accompaniment. These diskettes feature some of Gershwin's finest musical compositions, performed by some of PianoDisc's finest artists.

One trio of artists, Trio Paradiso, have made a unique contribution to the PianoDisc Music Library with their new release, "Trio Paradiso—Live!". Music for this release was all performed live in the PianoDisc Recording Studios using MIDI instruments–a piano equipped with PianoDisc's TFT strip, a set of MIDI drums and a MIDI bass. The result is a live performance that rivals any ever recorded for player piano. So watch for it!

What is MuSync™?

Some of you may have seen the spectacular video demonstration at the PianoDisc booth at Winter NAMM in Anaheim, or more likely at the recent PTG get-together in Kansas City. In it, four Sacramento Symphony musicians perform selections from Claude Bolling's "Suite for Flute and Jazz Piano Trio" in a pyrotechnic display of virtuosity, with pianist Brenda Tom's performance being played on the PianoDisc piano in perfect synchronization with the rest of the musician's "live" performance. At both shows the demonstration never failed to attract a crowd.

If you missed it, you missed PianoDisc's most exciting new innovation: the PianoVideo™ Series with Musync™ technology. These videotapes aren't like the ordinary ones you might rent at Blockbuster. Instead, they are coded with a special carrier signal that, when transmitted via PianoDisc's new PianoCD™ device to a PianoDisc system, will result in a perfectly coordinated joint performance of television pictures, a home stereo or set of powered speakers, and a PianoDisc system. The resulting musically synchronized performance (hence the name, "MuSync™") has the immediacy of a live performance, enhanced by video images and actual audio of the performers as they play.

PianoDisc plans a series of these PianoVideo™ tapes, some of them featuring prominent artists such as Floyd Cramer. "It's the absolute closest you can get to the experience of having Mr. Cramer playing in your living room, unless of course you can invite him over personally," says Gary Burgett, President/Marketing. "You hear his performance on your piano, you watch him actually playing on the television screen and you hear his whole backup orchestra and chorus. Really, it must be seen to be believed!"

PianoDisc plans to demonstrate MuSync™ technology at the Summer NAMM session in Nashville. Also, dealer demonstration samples will be available soon—call your PianoDisc account executive for details. And watch for more about MuSync™—it's hot!!

PianoDisc Installation Training 1994

- August 10-13
- September 21-24
- October 12-15
- November 9-12
- December 7-10

Continuing Education Series 1994

- August 8-9
- October 10-11

*Tuition for the Installation and the 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 attending a PianoDisc Installation Training seminar or a Continuing Education seminar, call PianoDisc at (916) 567-9999 during regular office hours.*

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Tech Gazette

Yamaha Service September, 1994

Yamaha News

OOPS! It probably didn't escape your notice that exactly the same *Tech Gazette* article appeared on the back page of the *Journal* for three months running. (Or was it four?) And you might've found yourself asking, Hmm. What's going on with those Yamaha people? Did somebody fall asleep at the switch? Too much surf & sand & sunshine out there in SoCal? Just what's *really* happening, anyhow?" Valid questions, to be sure.

Well, it's not like us, ordinarily, to let something like this just slip by. Those of you who've been around us awhile already know that. It follows, then, that you're entitled to an explanation of what actually contributed to the oversight.

The truth is that over the past few months, we've rotated our cameras to focus on *ourselves.* We saw that we needed to take some long, hard looks at how we provide technical support for our entire line of products; how we must expand and improve upon the level of that service; and how to best channel our resources, in order to make it all happen.

So, we cut back on most of the activities that were visible from the outside, and went deep inside our own workings. Next, we put our "possibility chefs" to work. We told them, "Take what we've got, and come up with the recipe for making it better."

This directive has triggered intensive internal study and research, the likes of which we've never before experienced, or even seen in our industry. And meetings? Yep, we've had meetings! Lots of 'em! Not the classic kind you've already heard about, where everybody gets together to decide when & where to have the next meeting. But really tough brainstorming sessions, many lasting far beyond normal business hours, where the really tough questions are dealt with.

Around this simmering cauldron of ideas, we've corralled our creative minds in the fields of technical services, business management & organization, telecommunications, computer technologies, multi-media presentations, and a few others.

Any undertaking of this magnitude, as you might imagine, takes time. As you're reading this, in fact, things are still cooking in our corporate kitchen. And what's beginning to bubble to the surface has gotten us downright excited about the future.

Because these innovations in service support are in their early developmental stages, we can't give you the whole picture. At least, not just yet. But perhaps we could take just a little peek into our kitchen window:

You've no doubt heard the current catch-phrase, "information highway". It's no secret that more and more piano technicians are now incorporating personal computers into their professional lives. Plus, the faithful old phone on the wall is becoming an increasingly more powerful business tool, in ways that we'd never imagined just a few years ago. Not only that, but if you had been at a PTG meeting back then, and you told them about the new fax modem you just got for your computer, they would've likely given you a blank stare and walked away. "Digital data", once a term reserved for people with horn-rimmed glasses and pocket protectors, has now become a part of our daily lives, in one way or another.

All of these technologies, along with some new philosophies and approaches, will surely play exciting roles in the days ahead. Promising pictures are appearing on the horizon, so stay tuned.

YAMAHA