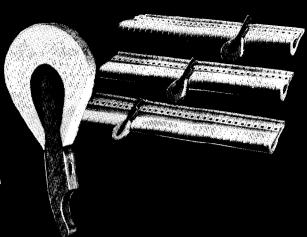




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IN THIS ISSUE...

4 THE PRESIDENT'S PERSPECTIVE

The mid-year board meeting. By Charles P. Huether

6 FROM THE EXECUTIVE DIRECTOR

Getting it right on paper. By Barbara Parks

8 REALIZE YOUR POTENTIAL

Add years to your life and zest to your work. By Ben McKlveen

9 THE INTERNATIONAL SCENE

Unfinished business. By Fred Odenheimer

10 THE TECHNICAL FORUM

Questions and answers: fallboard decals; butt spring strength; fuzzy, false tone; and showroom hype. By Jack Krefting 15 SOUND BACKGROUND

Cristofori actions and other design details.
By Jack Greenfield

19 PIANO TUNING

Part II: temperaments. By Daniel Ressl

22 IT'S THE LITTLE THINGS THAT COUNT

Hammer return springs. By Gerald Foye

26 TOOLS OF THE TRADE

Concerts: rock to symphony. By Richard Hassig

PLUS...

28 Membership

30 The Auxiliary Exchange

32 Advertising Index

33 Classifieds

35 Coming Events

THE COVER...

Detail from a Young Chang model G175.

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The President's Perspective



Charles P. Huether President

The Mid-year Board Meeting

Last January the Board of Directors met for its usual mid-year meeting. I always find it amusing to refer to our January meeting as a "mid-year" meeting, for we are only getting used to writing the new year on our letters, etc. However, it is the middle of our elected term of office. Sometimes to avoid this confusion we refer to it as a midwinter meeting but that is also somewhat inaccurate.

In any case, we did meet in January in Kansas City. The confusion of weather around the country had us all wondering what the mid-continent conditions would be. It did turn into a surprise, for we were greeted with spring-like temperatures. The Chinook winds had blown down across the prairies from the north and people were going without overcoats. To the warmth of the outside weather. we added a few degrees as we discussed the agenda and tried our best to reach decisions and set policies which were worthwhile.

We reviewed the reports of the officers, the executive director and the various committees. We were grateful to those who did report. Several committees did not send in reports, but we hope that that will be rectified for our next meeting. Our financial picture appears sound. Dues for the new year are coming in regularly and well. We discussed at great length problems and activity in the Examinations and Test Standards Committee as they launch the recertification program. This will be the year when recertification of CTEs will start and it is necessary to have a working program in place. The committee has a very good idea of what and how it should be done and the board approved.

The preliminary draft of the membership restructuring committee was digested and we were pleased to see the progress that they are making. There should be a proposal ready for discussion and vote in July.

Considerable time was spent discussing the medical insurance

program currently being offered, and several alternative plans were discussed. Preliminary data is being collected for comparison and when it is collected we will be better able to make some decisions. Any decision must take into consideration the protection of the coverage of those already being insured. We are in no hurry to jump before all the facts are in, that any change is truly an improvement and no one's coverage will be lost.

A committee of Canadian members is being established to provide input which we hope will help us understand and work to resolve problems which are unique to members in that country. It was felt that this will provide insights and inertia to improve PTG's image and membership among non-member technicians in Canada.

We reviewed our *Journal* and Directory. Reported errors in the Directory will be noted in a published addendum. Also discussed was advertising in other publications, etc. A modest trial of advertisements in music or music-related magazines is being planned.

All together it was a good meeting, taking us two full days. As usual, we had a diligent, attentive and well-prepared board together with a cooperative and prepared staff. That we did as well as we did is a credit to all concerned.

You will be reading this during the month of March, close to the time for filing income tax reports. I hope that when you fill out your report you will be able to take a deduction for expenses engendered while attending the convention in Kansas City last July. If you cannot do that, take it as a reminder to get in your registration for this year's meeting in Las Vegas and don't miss out on the deduction next year.

The convention will be an important one, for Council will be debating and voting on the membership restructuring proposal currently in the works. The outcome is important to all Continued on next page

Meeting. . .

of us and you will be remiss if you are not there to register your feelings. In addition, the Institute will be another of those great educationals we are so proud to present. Ben McKlveen will be in charge and he has some great plans in the works.

I hope that all chapters are working with the new technical tests and have developed your routine of administration by this time. I also hope that you have been testing new applicants. Remember, those who apply for membership have a right to be tested in a timely manner. Don't neglect this most important function.



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From The Executive Director



Barbara Parks Executive Director

Getting It Right On Paper

It seems like only a month or so ago that we were saying goodbye in the lobby of the Hyatt Regency Kansas City as another Guild convention came to an end. In reality, it's only a couple of months — well, four or five — until we get together for the next one in Caesars Palace in Las Vegas.

If you have ever planned a seminar or workshop, or for that matter even a chapter meeting, you know there's a lot more to it than just showing up. In fact, the event itself is often anticlimactic for those involved, because all the work and planning is done ahead of time.

I remember reading a story about Wilbur and Orville Wright. When they were kids, one of their first building projects was a sled. Someone, their mother, I think, told them "If you get it right on paper, it will be right when you build it." They applied that concept to their sled, and then their airplane. The rest is aviation history, although the sled was apparently nothing special.

That's probably just an inspiring piece of fiction, but I think the concept of planning and working things out on paper ahead of time is sound.

Planning a convention is a little like choreographing a ballet or directing a play. Everything has to come together in the right place at the right time and then come

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apart so the next class or social function can be put together.

I know that Ben McKlveen, this year's Institute Director, has had things well in hand for months. We have known since the convention planning meeting in November what functions would be in what rooms at Caesars Palace. Committee reports are already coming in for this summer's Council. In fact, 1987 Institute Director Dick Bittinger is well into planning the schedule for next year's Toronto Institute.

It's fascinating to watch meeting arrangements come together. During our convention planning meeting at Caesars, at least four other groups were meeting at the same time, including a convention of limousine service operators. If you think pianos take up a lot of space on an exhibit floor, you should have seen their trade show!

This summer's convention is already going on, at least on paper. It's time now for you to do a little planning of your own. You can get your first peek at some of the Institute offerings from Ben McKlveen in this month's Journal, and you should have received the first convention brochure. More will follow, so you can start planning your own convention activities.

I hope that when all these plans turn into reality, you are in Las Vegas to receive the benefits.





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TUNING & REBUILDING

Foundation, MTNA Announce Scholarship

The Piano Technicians Foundation has instituted an annual grant of \$500 to the Music Teachers National Association. The funds are to be awarded as a scholarship for the continuing education of a teacher in a pianorelated field of study. In announcing the scholarship and calling for applications, MTNA National Certification Chairman Harriet Green wrote in the January issue of *The American Music Teacher*:

"Breathes there a music teacher with soul so dead that never to him/herself has said: "Wouldn't it be great if only I could go back to school for a semester or two and take a course that would help me in my teaching and/or take more lessons on my instrument?" The majority of us have no doubt felt such desires from time to time, but for want of funds had to pass up a wish to make our dream come true. However, at least one lucky teacher can take heart because help is on the way, beginning in

1986, thanks to the generosity of the Piano Technicians Guild Foundation.

"An annual grant of \$500 was voted recently by the Foundation of the Piano Technicians Guild to help defray the expenses of a Nationally Certified teacher who wishes to study Piano Pedagogy, advanced Applied Piano, or another piano-related subject that is acceptable to their Board of Trustees.

"The National Certification
Board is delighted beyond words to
be able to make an announcement
such as this, and we echo the words
of PTG Foundation President Robert Russell: "The Piano Technicians
Foundation is extremely excited
about this joint venture in music
education. This is the beginning of
a collaboration of mutual benefit,
as both the PTG and MTNA are
keenly aware of the value of continuing education."

Green said that only MTNA teachers of at least 28 years of age who have been nationally certified

for at least six years are eligible to apply. A letter of acceptance by the proposed school or teacher must be included. Applicants' names will be placed in a lottery and the names of the winner and an alternate will be chosed by the Guild president.

"A well-educated and on-top-of-it teacher cannot help but be an above-average stimulus to students," Green said, adding that "Most of us came to music in the first place because we loved it and could not imagine life without it. We always, of course, have the option of working alone, reading the texts we may have missed along the way, or learning new works on our chosen instrument. Occasionally, though, most of us long for a study regime that is more structured. The gift which the Piano Technicians Guild Foundation has seen fit to share with us will make that wish a reality for at least one of our number every year. We are deeply indebted to them for their interest.'

'What Is The Piano Technicians Foundation?'

Ernest S. Preuitt Past President

Recently at a meeting of past presidents, I was asked, "Just what is the Foundation?" If some of our past presidents don't know about it, possibly others don't either.

May I shed a little light on this for you?

Some years ago at one of our board meetings, the subject of the Guild offering a scholarship to a piano student was approached. This idea was considered rather casually, but seriously enough that a scholarship committee was appointed.

Though this committee did not come up with anything concrete, it did have many contacts by telephone, in person and by letter. We found that money was not really the problem so much as administration of the program. One thing led to another, and finally the idea of a Piano Technicians Foundation was investigated. Even this was not easy, for when the Foundation idea was accepted, it was well on two years before it was finalized, and then only after changing

management.

It is a reality now and needs to be made better known to our members and to the public. It is much like our own Piano Technicians Guild in that it is subject to change in the bylaws and maybe even the concept of the whole thing. We hope that when our people realize what it can do for our organization, it will be supported wholeheartedly.

The purpose of the Foundation is to make grants toward library, research and development, and scholarships. The Foundation is administered by a board of directors consisting of the Guild president, vice-president, secretary-treasurer and two directors. They meet at the annual convention for election of officers and to take care of any necessary business. At this time, I know of no one who has collected any monies for time spent on Foundation business.

After about two years of correspondence and meetings, the Foundation is making the first grant for a scholarship, to the Music Teach-

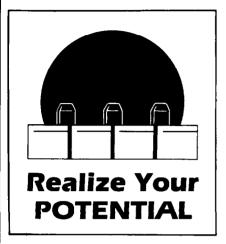
ers National Association. This will be a long-lasting public relations vehicle for the Guild. We have, for a long time, talked of getting better known to the public, and this is a great beginning.

For this beginning to grow into even bigger and better things for both Guild members and the public, it is up to each of us. Gifts may be given, in any amount, as memorial gifts or honorarium gifts to someone special to you. In addition, any gift to the Foundation is tax-deductible.

The Foundation is truly in its infancy, but with proper administration and understanding by the membership of its purpose, it can be one of the best tools the Guild will ever have.

Won't you think about it and take an active part in it, by studying its possibilities and then supporting it with enthusiasm?

Gifts to the Foundation may be sent to the Piano Technicians Guild, 9140 Ward Parkway, Kansas City, MO 64114.



Ben McKlveen 1986 Institute Director

Add Years To Your Life

And Zest To Your Work In the early years of my career I had a friend who had gone to tuning school with me. He became a store technician for the local Baldwin dealer. One of our mutual friends was an older man who claimed to be the "dean" of Cincinnati tuners. One day the "dean" came into the store and saw my friend Ken working on a set of dampers in a Baldwin grand.

"Young man, what are you doing?" the old man asked.

"I've refelted some dampers and I'm putting them back in the piano," was the reply.

The old man's face reddened. "Don't you know that you never take dampers out of a piano?" he bellowed. "They were put in there at the factory and they were meant to stay there. You aren't supposed to fool with those things!" He glared at us for a moment, then stalked off to the back of the store.

Ken looked at me, smiled and said, "He means well, and he's really OK. His business card says '35 years' experience.'
Actually, he's had about one year's experience 35 times."

I thought of that conversation as I began this article about the 1986 Institute in Las Vegas July 21-25. Don't let the years of your career be repeats of the years just passed. Continue your education, learn new techniques, make changes in the way you do things, broaden your knowledge. It will add years to your life and zest to your work.

Each month, I will give you a preview of the classes we will offer in July. If tuning is something that you want to improve, this year's institute offers some great options. One of the best and most popular classes in tuning is being given again this year by Member of Note and Hall of Fame member Bill Stegeman. He will take you through the whole process in logical order and show you the skills he has learned during the many years of his career.

Master tuner and master teacher Bill Garlick of Steinway will be doing his class on tuning. If you are lucky, you might be chosen to help Bill demonstrate tuning techniques.

Two more fine technicians combine to teach a class that has always been highly acclaimed. Jim Coleman and George Defebaugh will approach the tuning process from both the aural and the electronic point of view. They will give you many tips and valuable insight in the process.

If you attend Al Sanderson's class, you can kill two birds with one stone. Al will demonstrate pitch raising with the Sight-O-Tuner. It is a chance to see this gifted technician and inventor in action.

A summary of the Institute would not be complete without calling your attention to the contributions of the piano manufacturers.

Kimball is sending its gifted team and equipment to teach you grand regulating from start to finish. The Wurlitzer representatives will be there to do a similar class about vertical regulation, and this year, they will also do a class about the player piano.

Our friends from Yamaha are returning this year with a new class about voicing and will try to help you understand the techniques of working with hammers made in Japan.

Who could imagine an Institute without the gentlemen from Steinway? They will be there to help you with tips and suggestions about dealing with their piano and perhaps a few surprises. More about this later.

Baldwin will be represented by Sally Jameson, who will do a completely new class all about hammers. Her thoroughness and dedicated approach to her subject and to teaching makes a class not to be missed.

This is only the beginning.
There will be more next month!

The **International** Scene

Fred Odenheimer Chairman, International **Relations Committee**

Unfinished Rusiness

I finally put the important correspondence into files after it had accumulated through spring. summer and fall, and one can even see part of the writing desk. This really made me feel wonderful on the one side, but on the other side, there is now a basket full of "unfinished business" and what you would call a "dead letter file!" With other words, there is correspondence forgotten and not attended to, and some letters that were written and never saw a mailbox!

There is, for instance, the birthday card which was supposed to arrive in March of last year. Perhaps I can update it and make sure it will arrive this year. There are unanswered letters from Japan, Taiwan, Germany, Australia, England and a few from the U.S. Korea just went out, so there's one down. Meanwhile the weeds in the yard have a feast and the shop is still a mess. So for all of you who think retirement is easy street, forget it. As a matter of fact, it seems the more you retire, the busier you get.

Ralph Long sent me a copy of Music World, an English trade magazine in which he wrote an excellent article about our Guild and IAPBT conventions of last year. It covers nearly two solid pages. He writes of attendance, classes by instructors from across the seas, interviews with Dick Bittinger, Ernie Juhn, Barbara Parks and Charlie Huether.

As quoted by Ralph, here are some of Charlie Huether's

remarks on our own organization: "We are a democratic organization and delegates come from over 160-odd chapters to attend the Opening Assembly chaired by the President...keeping in mind at all times the improvement of ourselves to properly tune and service pianos and encourage the use of and the advantages of owning, playing, performing and most especially maintaining this queen of musical instruments — the piano.

On IAPBT: "It was founded as an umbrella organization that would include as members piano technicians associations from all the world...the whole idea being to develop a fraternity and a better understanding and relationship amongst people in all parts of the world." Perhaps at a future date, there is enough room in the Journal to reprint more of this fine article by a very valuable member of the International Relations Committee. Meanwhile, thank you, Ralph.

In the same magazine, there is an article on a "Trip to the Bavarian Woods," namely a trip to the Feurich-Euterpe factory in Langlau. Since one of our visits on the European tour will be a visit to this establishment, I had better not comment on this glowing report, save to say that you will enjoy your stay in Langlau as much as did the 25 English retailers who were there for two days.

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Questions And Answers: Fallboard Decals; Butt Spring Strength; Fuzzy, False Tone; And Showroom Hype

Jack Krefting Technical Editor

Fallboard Decals

• My problem is partly practical and partly ethical and, because of the latter, I would prefer not to be identified. One of my customers has a medium-sized Ellington grand that isn't great, but isn't bad either, especially for a secondline piano. It has a full sostenuto and agraffes, and is quite nice, but needs rebuilding. The ethical part of the problem lies in the fact that it has been refinished and now has a Baldwin decal on the fallboard. Now, I feel that this is wrong even if the piano was made by Baldwin, but I don't know whether to tell the customer. If I rebuild it, I should change that decal, right? The practical part of the question is, how do I apply the new decal if the owner agrees to changing it, and should I accept the rebuilding job without their agreement to changing decals?

The ethical part is the hardest, so let's try that first. It is absolutely wrong, in our opinion, to change the name on the fall-board of any piano. It is deceptive and is a disservice either to the piano or to the false name, or both. Anyone in the piano business who does this is doubly

accountable, because he is considered by the public to be an expert, and therefore someone to be trusted. If he violates this trust, he drags other dealers and technicians down with him. The public becomes as wary of buying a used piano as they are of buying a used

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The lay person trying to sell the Ellington as a Baldwin would be considered similar to the same person trying to sell a Plymouth as a Chrysler. It's a fraud, sure, but did he know better? Courts can be more interested in the person's intent than in his actions.

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car, and for the same reasons.

Having said that, we also feel that there are degrees of guilt which can range from the innocuous to the criminal. The unknowing piano owner, doing his own refinishing, who puts a "Winter & Sons" decal on an Ivers & Pond spinet because he was unable to obtain the correct decal and didn't want the fallboard to be bereft of a name is merely confusing the issue without doing either name any gross disservice. The dealer or technician who applies a Steinway decal to a stencil grand is, on the other hand, committing a criminal act that could put him behind bars.

The Baldwin name on the Ellington piano is more of a gray area because Baldwin *did* build the piano, after all. The lay person trying to sell the Ellington as a Baldwin would be considered similar to the same person trying to sell a Plymouth as a Chrysler. It's a fraud, sure, but did he know better? Courts can be more interested in the person's intent than in his actions.

It isn't necessary to lose a rebuild job over this issue, but to protect yourself you should diplomatically inform the client that the fallboard decal is misleading and should be changed when that is convenient, and certainly before the piano is sold. If you are refinishing the piano, tell the client reassuringly that you will correct the mistake and apply the Ellington decal. If he insists on a Baldwin decal, politely but firmly let him know that this is fraud, and that you cannot do it, period. You won't lose any worthwhile work by standing up for principle, so don't spend any of your valuable time worrying about it.

If you are not refinishing the piano, changing the decal will be difficult. The face of the fallboard will have to be refinished, or at least partially so. Since the decal is generally applied just under the top coat, it won't be necessary to strip the piece down to bare wood, just far enough to remove the decal. There are products available which remove the top layers of finish (Formby's "refinisher", or common solvents labeled "amalgamator" or "homogamator" will do the job) but if the old finish is excessvely dark or cracked, such treatments will make the fallboard look quite different from the rest of the case. So, unless the existing finish is clear, it may not be practical to try to replace the decal.

Decals are available to be applied with varnish, or with lacquer, or by rubbing with a burnisher. A varnish decal can be applied over anything, and so is universal, but is also the most troublesome to apply. The procedure involves pouring a small quantity of varnish into an open container, to sit until it becomes tacky. The varnish is then applied to just the gold and black parts of the decal with an artist's brush, after which the decal is applied and rolled onto its surface with a veneer roller or something similar. Then the backing paper is moistened and removed, after which the tissue is carefully peeled away. After allowing 24 hours' drying time, the gum may be cleaned off the decal face and surroundings with naphtha, and then the decal can be recoated with varnish.

Lacquer decals are a lot easier in that the lacquer can simply be sprayed over the entire decal, but it must then be applied quickly, .

If the springs are all too strong, the best way to adjust them is to move the entire spring rail downward, as this moves the point of application closer to the fulcrum and thus decreases the spring's leverage.

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and only to a lacquered surface. The backing paper can be moistened and removed in minutes, as can the tissue, and the residual gum cleaned up as with the varnish decal.

The new "rub-on" decals are easier for the average technician to apply, requiring no clean-up afterward. They are more expensive — \$6 to \$10 for fallboard decals and \$30 to \$60 for sound-board decals — but since it is practically impossible to make a mistake if the directions are followed, the occasional user is sure to fare better with them than with the varnish or lacquer decals.

Butt Spring Strength

One of my clients has a vertical with a repetition problem. I have gone over the regulation, action centers and everything else and have finally diagnosed the problem as being caused by butt springs that are too strong. I can't shim the rail any farther forward toward the springs because it's already touching the damper wires on full dip, even though the dip is normal and the dampers aren't lifting too early. Is there anything to do besides individually weakening the springs?

This is the typical repetition problem that can occur when

a too-strong spring pushes the butt back before the jack can get underneath, obvious only under certain conditions. If this diagnosis is correct, it will indeed be necessary to weaken the springs somehow.

First of all, the in/out position of the spring rail is regulated to prevent excessive damper travel, not to adjust spring strength. Space the rail forward or back by adding or removing punchings until, at full key dip, the damper wires almost touch the stop felt on the hammer spring rail. Check to be sure that the damper head can be pulled toward you another 1/16 inch or so for insurance, and that will be the best in/out position for the rail. Before proceeding, depress the damper pedal and the bass sustain pedal, if any all the way to be sure it does not lift the dampers any further than they are lifted with the keys. If they block on the hammer spring rail with either pedal, limit the pedal travel with blocking felt.

If the springs are all too strong, the best way to adjust them is to move the entire spring rail downward, as this moves the point of application closer to the fulcrum and thus decreases the spring's leverage. Conversely, if the springs are uniformly too weak and they are touching the butts near the bottoms of their grooves, the preferable way to strengthen them is to raise the rail.

Sometimes it is impractical to raise or lower the spring rail because there are no slotted holes for adjustment, or the rail is already at its limit, or because doing so would move the springs out of their grooves in the butts. In such cases, the springs can be adjusted individually by slipping them out of their grooves and pushing or pulling them with a finger or spring hook. To strengthen a spring, pull it up between shanks, toward the hammer rest rail, then slip it back in its groove. To weaken, apply pressure on the spring just below the coil, pushing the spring toward the strings, and then release it back into its groove. The greater the pressure, the greater the effect.

If the action should happen to be one of the Schwander design, obviously the springs will have to be treated individually by slipping them out of their cords and pulling up to strengthen, pushing down to weaken. Often we find that these actions have springs that are too weak, exhibiting the problem of hammershanks bouncing excessively off the hammer rail after a staccato blow.

Fuzzy, False Tone

So many new pianos, especially verticals, seem to have a fuzzy, unfocused, false sound that takes a lot of work to correct and sometimes cannot be corrected. I know a lot of it is because the hammers aren't fitted, not enough tunings in the factory, and so on, but I also wonder if some of it can possibly be traced to lack of bearing or poor scaling or some other thing the technician really can't fix on the spot. And even if you can fix it, nobody wants to authorize the necessary work. What do you suggest?

A: I don't think there is any one answer that would apply to all new pianos, or even to all pianos by a particular maker, for that matter. Piano making is a horribly labor-intensive activity, complicated by the fact that not all tasks can be performed by unskilled labor. Some jobs require skill and judgement, and people with those attributes are not always eager to work in a factory environment for relatively low pay. Yet the manufacturer cannot afford to hire highly skilled technicians because that would force him to price himself out of the market. This is especially true now, with some Asian competitors paying roughly 15 percent of what the U.S. maker pays for equivalent labor.

What most new pianos really need, in my opinion, is more time in the "float" and more attention paid to action finishing, string leveling and voicing. An extra four to eight hours' time spent on each piano by a skilled technician at the end of the line would make a dramatic difference, especially in American pianos in the

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Since it is difficult to get anyone to pay for the needed work, we should be thinking in terms of priorities: what can the technician do that will make the biggest improvement with the least effort?

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medium-to-high price range. In response to competition, U.S. makers have made significant improvements in quality in the past couple of years, but for some at least, it was too little, too late.

The factory term "float" describes pianos in the process of manufacture, but is generally used in reference to instruments that are complete or essentially complete but not yet boxed for shipment. Within reasonable limits, the longer a piano is allowed to settle in the factory before final adjustments, the better the product. It makes sense that a piano

that is allowed to settle in the factory, assuming it is then retuned and reregulated before shipment, will not settle so much after shipment. Increasing the float time is expensive, though, and it adds to the price of the piano just as surely as would, say, a handrubbed finish or a solid spruce soundboard. The piano not only sits around and takes up space. but even if no additional labor were expended on it, it is sitting around when it could be sold, representing dollars that could be in the maker's bank account. This makes it very tempting to ship the piano as soon as possible, and let the dealer or the customer or the technician worry about stabilizing the instrument.

Since it is difficult to get anyone to pay for the needed work, we should be thinking in terms of priorities: what can the technician do that will make the biggest improvement with the least effort? Let's focus on the typical new vertical.

If there is a lot of falseness, rub the treble strings *before* attempting to mate hammers or tune, because the rubbing will help a lot but will affect the string level and destroy the tuning. Using a "false beat supressor" (invented by Jerry O'Connell and available from Schaff) or a

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39 North Bennet Street • Boston, Massachusetts 02113 617-227-0155 drumstick or something similar, rub up and down the speaking length of each string in the top section at least, pushing the string firmly toward the sound-board. This not only settles the string firmly on the bridge, but also bends it a bit right where it crosses the V- bar. In our experience, 90 percent of the falseness will disappear instantly, after only about five minutes' work, so this is a very efficient use of your time.

The remaining 10 percent will take a lot longer to solve, and will therefore have to be allocated a lower priority. if someone is willing to pay for the extra time and effort, you can then solve each false string problem individually. Check the bridge first because it's the most likely culprit, looking for a loose bridge pin, bad notching, and lack of downbearing and/or sidebearing. Then check the V-bar for pits and flat spots, spacing the string to see whether the falseness disappears when the string is in a new position on the V-bar. Then, if all else fails, replace the string.

The next high-priority procedure is to be sure the hammers are spaced to strike all three strings. Push a group of hammers up to the strings and observe the alignment. In some instances, it is easier and better to space the strings than the hammers, and since we haven't tuned the piano we can do this without a problem. Don't space strings in the tenor if there are wedge dampers, though, or you will spend more time reregulating the damper than it would have taken to space the hammer. This entire spacing/ alignment procedure usually takes no more than 10 or 15 minutes and improves the piano immeasurably, so it is a good use of your time.

Next, mate hammers to strings. Step on the damper pedal and, with the hammer lightly touching the strings, pluck each string of the unison. If one or two strings ring when plucked, rather than being at least partially damped by the hammer, file a bit of felt from that part of the hammer with a piece of 150 or 180 garnet paper. If most of the unisons have an open middle string,

the cup-shape was never filed off the hammers, so they should be gang-filed with a wider piece of sandpaper. Depending on how many open strings there are, this procedure can take anywhere from a few minutes to a half-hour or more, but is time well-spent because it does more to eliminate the fuzzy sound than any other procedure.

Next, check the regulation, paying particular attention to lost motion and letoff. Tap the keys behind the balance rail with the fingertips, watching the hammers. If they wink, prop the hammer rail up a bit to provide the barest amount of lost motion rather than lowering 88 capstans. Of course, a few will have to be adjusted individually anyway, but this will correct the problem on most of them and thus save time. Now check for too much lost motion by pulling down on the hammer rail, watching for each hammer to wink *just slightly*, not more than 1/32 inch, and adjusting capstans on the stragglers. Another method is to barely depress each key, watching the backcheck to be sure that it does not appear to move before its catcher.

Wide or uneven letoff contributes to poor tone, and should be corrected. On many verticals, the studs that support the letoff rail can be quickly bent to achieve an overall adjustment, which can be another timesaver. Naturally, individual adjustments still have to be made as required.

Other aspects of the regulation have to be considered as well, of course, and this segment could be the most time-consuming of all if the action is really out of adjustment. But assuming no more than normal settling has occurred, and that the piano was in regulation when it left the factory, a quick touch-up to correct the most glaring flaws might take, say, 40 minutes or so. Then, figuring another half-hour to tighten flange screws — this isn't a spinet, we hope and one hour for tuning, we have spent a total of three hours on the high-priority work that yields the most noticeable results. Naturally it would be better to spend an entire day on the piano and correct every minor problem, and we don't wish to suggest that halfway measures are the answer to the problem, but as a practical matter, nobody is going to pay for eight hours' work on every new piano and this at least represents a start.

Some dealers are willing to pay for some of this work to make the instruments easier to sell, and sometimes they can get at least partial reimbursement from the manufacturer. Then, too, some makers offer a service bond or certificate which pays for some of the needed work. The remainder will have to be borne by the customer, but even that blow can be softened a bit. The technician, after having corrected the major problems as described above, can inform the customer that the little things will be taken care of during regular service visits, when the piano should be tuned anyway, thus encouraging the customer to contract for regular maintenance. Some things will be charged for, and some not, but eventually the piano will be as good as it can be, considering its design.

The important thing is to be able to assign priorities and to be able to see the big picture, recognizing in the beginning which problems can be corrected by the technician and which ones can't, informing the dealer immediately of any that fall into the latter category.

Showroom Hype

We continue to hear stories about "microscopic teeth" which supposedly help to keep tuning pins from slipping in the pinblock. In response to a number of letters and comments, here are what we consider to be the facts:

A well-known manufacturer was apparently using a rolled thread for a number of years. The rolling process somehow left slight burrs of steel projecting from the surface of the pin, all angled in the same direction. Someone in the company, no doubt a sales or marketing type, discovered that if the pin were twirled clockwise in a loosely held handkerchief, it would turn smoothly. But if it were turned counterclockwise, the tiny steel burrs would catch the cloth fibers and it wouldn't turn so smoothly.

Based on the usual layman's assumptions that (a) pianos go out of tune because of pin slippage, and (b) the pins are only turned clockwise during tuning, it seemed to make sense to try to turn this little difference into a customer benefit. So dealers and salespeople everywhere were instructed to have an ordinary cut-thread pin, a special rolled-thread pin and a presentable handkerchief ready for demonstration. The idea was to show that, because of this unique feature. their brand of piano would stay in tune longer.

Of course, anyone who has ever watched a piano tuner at work knows that the pins are turned in both directions during tuning and the more observant have noted that pitch changes aren't always in the form of a raise. If the pins do indeed have to be turned counterclockwise on occasion, wondered some customers aloud, wouldn't these microscopic teeth cause severe wear on the pinblock and shorten its life?

We don't know whether such questions were pivotal in the decision, but according to Bill Dickson of AMSCO, that firm changed to a cut thread on all their tuning pins some three or four years ago, making that particular sales demonstration obsolete.

This was just about the time, incidentally, that another maker started sticking the wire all the Someone in the company, no doubt a sales or marketing type, discovered that if the pin were twirled clockwise in a loosely held handkerchief, it would turn smoothly. But if it were turned counterclockwise, the tiny steel burrs would catch the cloth fibers and it wouldn't turn so smoothly.

way through the becket hole and bending it over on the other side of the pin, obviously to keep the wire from unwinding if the stringer neglected to properly crimp the becket. Technicians' complaints regarding this procedure were answered self-righteously by a vice president, also obviously not a technician, who deadpanned that this was to protect the hands of the visually impaired technicians, who

might otherwise injure their fingers on the ends of the wires!

What this is all leading up to is - you guessed it - another contest. This one, assuming we get any entries, will be called "The Dumbest Sales Claim Contest," and will be limited to technical-type claims only, such as the above. We will try not to embarrass the manufacturers unduly, and will certainly keep in mind our pledge not to condemn any maker's product line. At the same time, in a humorous vein, we might gently chide them for making silly technical claims without first checking with a technician.

Most of the claims heard in showrooms are not factory-authorized anyway, just something dreamed up by the salesperson, but someone needs to debunk them, if only to set the record straight. There will be separate classifications for manufacturers and for salespeople and, lest we take ourselves too seriously, for technicians who make dumb sales claims regarding their services as well.

There will be impressive prizes for the winners, prizes roughly commensurate in value with that of the winning sales claims. Please send all entries, or preferably good articles and technical tips, to me at this address:

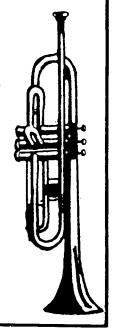
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S O U N D BACKGROUND

Cristofori Actions And Other Design Details

Jack Greenfield Chicago Chapter

Earlier Key Lever Actions

Cristofori's piano case structure and scaling were not drastic changes from the traditional Italian harpsichord, but his piano action was an entirely new, sophisticated mechanism that was not surpassed by any builder until at least 50 years after the end of his career. Cristofori must be given the credit he claimed for origination as shown by the word "inventor" he placed after his name in the inscriptions on each of his three existing pianos.

None of the earlier instruments suggested by some historians appear to have been likely sources for the principles of escapement, checking, damping and other new ideas Cristofori incorporated in his design for an action for a keyboard stringed instrument to play *piano* and *forte*.

An instrument described with these terms in a letter of 1698 by an Italian builder named Paliarino is believed to have been a type of harpsichord that produced dynamic variations by changes in the number of registers in use. In earlier instruments such as the clavichord and keyed dulcimers, the keys operated as simple levers. Keyed xylophones described by some mid-17th century writers contained

bars of wood struck from below by hammers at the ends of simple lever type keys. The only use of these instruments mentioned was by carilloneurs for practicing.

A Keyboard Bowed String Instrument

Another type of instrument Cristofori was more familiar with was the Geigenwerk. "Geige" was a German word for bowed string instrument, a word also used as a prefix for some organ stops with string-like tones. Cristofori's 1716 inventory of Medici instruments listed a Geigenwerk which had been acquired by Grand Duke Ferdinand II, Prince Ferdinando's grandfather. The instrument was one of 23 built around the start of the 17th century by Hans Haiden of Nuremburg. It had a wingshaped case similar to the harpsichord but was strung with gut strings. The strings were put into vibration by a row of five steel wheels rotating behind the keyboard in a vertical plane below and perpendicular to the strings. The wheels were covered with parchment coated with rosin and were operated by a treadle. Pressure on a key forced the string into contact with the rotating wheel just below. Although these instruments had

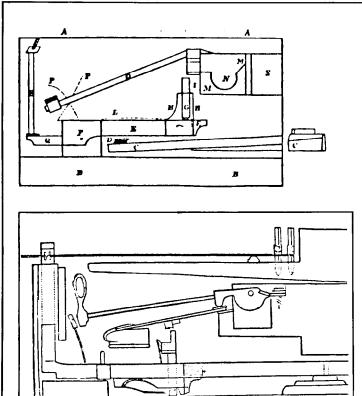
had limited success, Cristofori chose to proceed in an entirely new direction in designing a mechanism for producing tone by hammerblows.

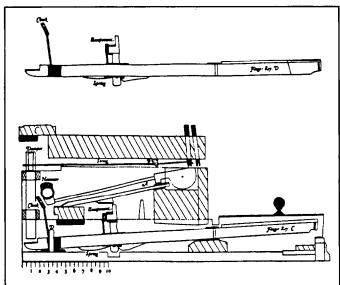
Cristofori Action Principles Established by 1709

Maffei's drawing in his 1711 article shows that by 1709 (Journal, September 1985, page 23) Cristofori had established principles for design of a hammer action with escapement and checking so that the hammer was flung a small distance toward the string, and was caught on the rebound without blocking and bouncing. In addition, damping was controlled by the key lever, thereby allowing the performer to play staccato, legato, or sustained notes, loud as well as soft. The later designs contain major changes and refinements which improved the functioning of the action.

Variations In Action Design

In the 1709 action, the intermediate lever performed some of the functions of the wippen in the modern upright action, transmitting the motion of the key lever, sup-





Cristofori action designs; 1709 (top left); 1720 (left); and 1726, with key lever (above).

porting the jack and moving the damper lever which appears to have been a harpsichord jack with a leather pad held up below the strings instead of a plectrum. In the later actions, Cristofori mounted the jacks in slots in the key levers but as in modern grand actions he used the back end of the key lever to raise the damper and to support leather-covered padded backchecks mounted on heavy wires as a replacement for the silken network for catching rebounding hammers in the 1709 design. The location of the damper pads was changed so that they rest on top of the strings for damping as in modern grand pianos. The later intermediate levers are smaller and thinner. They are attached to leather hinges mounted on the heavy cross rail of the action frame below the hammer butts. The other ends of the intermediate levers rest on a rail similar to the hammer rail of the modern grand action. Thin blocks for the jack escapement are mounted on the underside of the intermediate levers, in about the middle of the length of each.

The position of the jack is regulated forward or backward by bending the wire holding the padded jack stop. This determines the

height at which the jack slips out from behind the escapement block when the jack is raised by pressing down the key. The lever system propels the hammers at about eight times the downspeed of the keys with a force that is directly proportional to the finger touch. After escapement, the intermediate lever drops to its original position. When the key is held down for sustained notes, the descending intermediate lever slips by the elevated jack which is held in place with springs that allow it to be tilted to the side. The jack returns to starting position after the key is released. The escapement mechanisms in all three of the later pianos function in a similar manner. However, there are minor differences in some details.

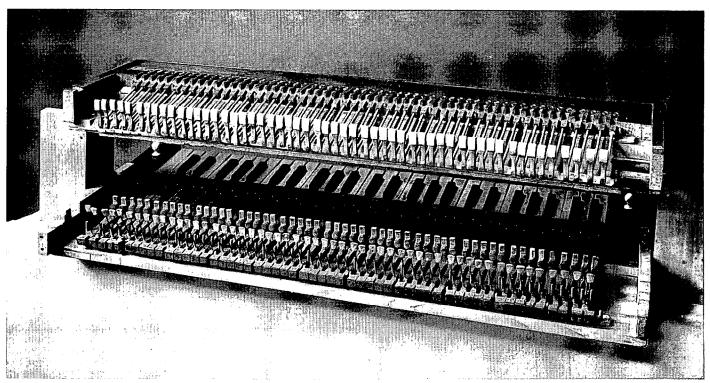
Hammer Design

One of the most important differences in the Cristofori pianos is the variation in hammer head design. In the 1709 piano, hammer heads were leather-covered wooden blocks. At present, in the 1720 piano the hammer heads are carved of wood in the general contours of a modern hammer head. They are about two inches long and have a soft leather covering on the

front tip. These hammer heads are not the original type. Pollens believes the original heads were similar to those of the 1726 piano with rolls of parchment. In the 1722 piano, the hammer heads, about 1/2 inch long, consist of thick leather-covered blocks similar to those shown in Maffei's drawing of the 1709 pianos. The 1726 hammer heads, about one inch in overall length, have three components, a small roll of parchment, a soft leather pad on the striking surface, and a small wooden block base for attachment to the hammer shank. In each of the pianos, the hammer shanks, 5/64-inch diameter cedar, range from 4 1/2 to five inches in length, being slightly longer in the bass. The hammer butts, approximately two inches long, are held together and supported on two long sections of center rod, one inserted from each side. Screw attachments at the bottom ends of the 1720 hammer butts appear to have been added after the piano was built.

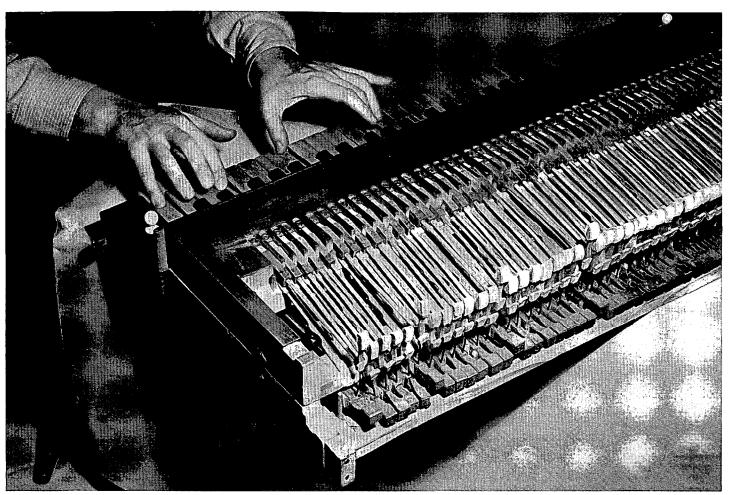
Inverted Pinblocks

In the 1722 and 1726 pianos, the pinblocks are inverted with the strings below attached to the lower ends of the tuning pins as described in the 1709 pianos by



Recent photograph of complete action, 1720 Cristofori piano. (The Metropolitan Museum of Art, the Crosby

Brown Collection of Musical Instruments, 1889. (89.4.1219)



Closer view of action details: hammer heads, backchecks, intermediate levers, and hammer butts, 1720 Cristofori Piano (The Metropolitan Museum of Art,

the Crosby Brown Collection of Musical Instruments, $1889.\ (89.4.1219)$

Maffei (Journal, September 1985, page 24). Cristofori returned to this arrangement after building the 1720 piano with the pinblock below the strings in what we consider the normal position. Pollens has observed that the 1720 piano has longer hammer heads to reduce hammer travel since the strings are further up than in the other pianos with inverted pinblocks.

Hammer Strike Lines

Pollens' measurements for string lengths and striking points show a considerable difference between the strike point location in the 1720 piano and the later ones. Table 1 shows that the 1720 piano hammer line follows the general trend for placement of the plucking point in typical Italian harpsichords. In the later pianos, the hammer line was moved further away from the middle of the strings. These differences may have been due to space limitations but it is also likely that Cristofori was experimenting to establish the most desirable hammer line placement. In modern pianos, the hammer line is often located around 1/8 the speaking length. Wolfenden's recommendations (A Treatise on the art of Piano Forte Construction, 1916) are also shown in Table I. Although Pollens also found differences in the measurements of the keys and action parts, the differences are proportionate, providing equivalent leverage rations in all three pianos.

Una Corda Introduced

in the 1722 and 1726 pianos, Cristofori introduced the first

A Questionable Reference

Pianos And Their Makers. written by Alfred Dolge in 1911, has a good drawing of the 1720 Cristofori piano action. However, the drawing "Cristofori's Hammer Action, 1707" on the same page is not authentic. No recognized authority, past or present, makes any mention of a 1707 Cristofori action. Dolge's drawing has absolutely no resemblance to Maffei's drawing of the 1709 actions. Dolge also wrote that Cristofori was born in 1683 and died at the early age of 48 years either because of overwork or overindulgence in "the sybaritic life of the court." L.M. Nalder's The Modern Piano (1927) repeats Dolge's errors.

grand piano una corda action shift. Here the action is shifted toward the base so that only one string of each pair is struck by the hammer. The action is moved by a hand stop. All three Cristofori pianos also have a small knob on the cheek blocks which can be used for moving their actions in and out of the piano case.

Present State Of the 1720 Piano

The 1720 piano has had the greatest number of alterations from its original state. Accurate records have been kept of the work done on

the instrument since it came to the attention of Ponsicchi in 1874. The major restorations made since then have been replacement of the deteriorated parts with closely copied new duplicates. There is no documentation concerning the change in hammer design made before 1875. There are also markings and other signs indicating early alterations in the keyboard, keyframe and bridge to shift from an original range of F2-B5, with F#1 and G#1 omitted, to the present range of C2-F6. Pollens' measurements show the bridge alterations were made in a manner to preserve original scaling.

The 1720 piano, restored to playable condition, has been used occasionally in performance. Record MMA L 1803, produced by the Metropolitan Museum of Art, is a recording made in September 1977 and January 1978 of the performance of four Giustini sonatas by Mieczyslaw Horszowski on the 1720 Cristofori piano. Due to the hardness of the hammers and the thinness of the strings, the sound is much closer to harpsichord tone than modern piano tone, but it is not as loud nor as brilliant as the tone of firmly quilled existing contemporary Italian harpsichords available for comparison. Subdued tone quality as well as touch requiring entirely different finger technique were reasons given by Maffei for lack of enthusiasm for the early piano by most musicians in Italy. However, it compared favorably with the clavichord and the next phase in the development of the piano took place in Germany where clavichords were more widely used.

Table 1: Percentage of string length, distance to plucking point in typical Italian harpsichord and hammer strike line in Cristofori and modern pianos.

Note	Italian Harpsichord (%)	Cristofori Pianos 1720 (%)	1722 (%)	1 726 (%)	Modern Piano (%)	
C6	28.9	17.2	7.0	5.0	10.0	
C5	25.9	17.8	8.2	6.1	11.1	
C4	19.3	16.0	7.9	5.3	12.5	
C3	12.0	12.2	7.8	6.5	12.5	
C2	8.8	8.7	6.8	6.8	12.5	_

PIANO

Part II: Temperaments

Daniel Ressl Vancouver, BC, Chapter

Equal Temperament, Standard Procedure

In 1862, Hermann Helmholtz, physiologist and physicist, published On the Sensations of Tone, which advocated equal temperament piano tuning. "It necessarily produces more disturbance to hear very falsely tuned thirds among correct intervals, than to hear intervals which are equally out of tune and are not contrasted with others in perfect intonation. Hence, as long as it is necessary practically to limit the number of separate tones within the octave to 12, there can be no question at all as to the superiority of the equal temperament with its 12 equal semitones, over all others, and as a natural consequence, this has become the sole acknowledged method of tuning."1

He also condemned meantone tuning for its wolves and incorrectly wrote that Werckmeister invented, and Bach used, equal temperament. On the contrary, a contemporary of Helmholtz wrote: "The modern practice of tuning all organs to equal temperament has been a fearful detriment to their quality of tone. Under the old tuning, an organ made harmonious and attractive music, which it was a pleasure to listen to, even though it might be interrupted by a wolf now and then. Now, the harsh thirds, applied to the whole instrument indiscriminately, give it a cacophonous and repulsive effect."²

Figure	1	
F33	174.6	174.6
F#34	185.0	185.0
G35	196.0	196.0
G#36	207.7	207.7
A37	220.0	220.0
A #38	233.1	233.1
B39	246.9	247.0
C40	261.6	261.6
C#41	277.2	277.2
D42	293.7	293.7
D#43	311.1	311.2
E44	329.6	329.7

For cultural, social, economic and political reasons, the physicist's opinion prevailed over the musician's, and today it is the exception rather than the rule to find a tuner who is competent to handle tuning other than equal temperament. Fortunately for musical reasons, recent interest in authentic baroque and classical performance revived meantone and well temperament tuning.

Column 1 (Figure 1) perfectly equal temperament frequencies, is derived by repeated division of A49's 440 cycles per second by the twelfth root of two, 1.0594631, to yield equal semitones decreasing to one-half frequencies at octaves below. Tuning fifths narrow .6 bps and fourths wide 1 bps, according to standard equal temperament procedure, relates frequencies as follows: 4 x lower tone of a fourth = (3 x upper tone of a fourth) - 1. (3 x lower tone of a fifth) -.6 = 2 x

¹On the Sensations of Tone, Helmholtz, 1885 Ellis translation. ²Philosophy of Music, William Pole, D.Mus., 1876.

upper tone of a fifth. Starting at C40's 261.626 cycles per second and applying these two formulas in the order of standard equal temperament procedure yields column two. (Figure 1)

The results are so close that the extra effort required to tune gradual beat rate increases into chromatically ascending fourths and fifths would make no practical difference. Individual piano idiosyncracies are a far greater source of error.

- 1. Tune C40 beatless to and one octave below a C523.3 fork. The beat rate of A^{\dagger} 24 and the fork should be the same as A^{\dagger} 24C40. If A^{\dagger} 24 beats too rapidly with the fork to be useful, pull A^{\dagger} 24 within six bps wide of the pure major seventeenth (an expanded major third) with the fork for easy comparison.
- 2. Tune F33 sharp of the pure fifth with C to .6 bps F33C40. Test A\(^1\)24C40 slightly slower than A\(^1\)24F33.
- 3. Tune G35 flat of the pure fourth with C to 1 bps G35C40. Test E^{\downarrow} 31G35 slightly slower than E^{\downarrow} 31C40.
- 4. Tune D42 flat of the pure fifth with G to .6 bps G35D42. Test B\(^1\)26D42 slightly slower than B\(^1\)26G35, and F33D42 seven or eight bps.
- 5. Tune A37 flat of the pure fourth with D to 1 bps. A37D42. Test F33A37 slightly slower than F33D42.
- 6. Tune E44 flat of the pure fifth with A to .6 bps A37E44. Test C28E44 slightly slower than C28A37. Also FA, FD, GE, CE gradually increase at about 7, 8, 9, 10 bps.
 - 7. Tune B39 flat of the pure

Figure 2		
A37	220.0	220.0
A #38	233.1	233.1
B39	246.9	246.9
C40	261.6	261.6
C#41	277.2	277.1
D42	293.7	293.7
D#43	311.1	311.1
E44	329.6	329.6
F45	349.2	349.1
F#46	370.0	369.8
G47	392.0	391.9
G#48	415.3	415.2
A49	440.0	440.0

fourth with E to 1 bps B39E44. Test G35B39 slightly slower than G35E44, and GB = FD.

- 8. Tune F \sharp 34 flat of the pure fourth with B to 1 bps F \sharp 34B39. Test D30F \sharp 34 slightly slower than D30B39, and F \sharp A = CE.
- 9. Tune C#41 flat of the pure fifth with F# to .6 bps F#34C#41. Test A25C#41 slightly slower than A25F#34, and AC# = GE.
- 10. Tune G#36 flat of the pure fourth with C# to 1 bps G#36C#41. Test E32G#36 slightly slower than E32C#41, and GB, A[†]C, AC# gradually increase.
- 11. Tune D#43 flat of the pure fifth with G# to .6 bps G#36D#43. Test B27D#43 slightly slower than B27G#36, and FD, F#D#, GE gradually increase.
- 12. Tune A#38 flat of the pure fourth with D# to 1 bps A#38D#43. Test F#34A#38 slightly slower than F#34D#43. Test F33B\(^{\}38\) 1 bps wide. Test D\(^{\}29F33\) slightly slower than D\(^{\}29B\)38, and FA, F#A\(^{\}, GB, A\(^{\}C, AC\#, B\)D, BD\#, CE gradually increase.
- 13. Bass. Pure octaves. Minorthird major-sixth test (EG=GE) reliable down to C16. Pure twelfths (C16G35) down to A1. Also, a gradual decrease in the beat rates of chromatically adjacent descending major thirds to A25, tenths to A13, seventeenths to D6, and minor twenty-firsts (D6C40) down to A1.
- 14. Treble. Pure octaves. Tests: third-tenth (D_{2} 9F33 = D_{2} 9F45) up to C64. Third-tenth-seventeenth (A37C#41 = A37C#53 = A37C#65) up to C76. Pure twelfths (F57C76) up to C88.

Equal Temperament, One Beat Per Second Procedure

Compared to the standard equal temperament procedure, this one beat per second procedure has the advantages of eliminating estimation of the rate of .6 bps; moving the temperament a little higher on the keyboard where inharmonicity causes fewer deviations and 3:2 fifths are less muddied by beats at the 6:4 coincident partial level; and starting from the commercial standard pitch A instead of middle C.

Column 1 (Figure 2), perfectly equal temperament frequencies, is derived by repeated division of

A49's 440 cycles per second by the twelfth root of two, 1.0594631, to yield equal semitones decreasing to one-half frequencies at octaves below. Tuning fifths narrow 1 bps and fourths wide 1 bps, according to this procedure, related frequencies as follows: $(3 \times 1) = 2 \times 1$ ($3 \times 1) = 4 \times 1$) and 3×1 ($3 \times 1) = 4 \times 1$) are tone of a fourth. Starting at A49's 440 cycles per second and applying these two formulas in the order of this 1 bps procedure yields column two.

Comparing columns one and two, notice that the results are so close that the extra effort required to tune gradual beat rate increases into chromatically ascending fourths and fifths would make no practical difference. Individual piano idiosyncracies are a far greater source of error.

- 1. Tune A49 a beatless unison with an A440 tuning fork. The beat rate of F21 and the fork should equal the beat rate of F21A49.
- 2. A37 a beatless octave below A49. Test A37D42 = D42A49, and F33A37 = F33A49.
- 3. E44 1 bps flat of the pure fifth above A. Test C28E44 slightly slower than C28A37.
- 4. B39 1 bps flat of the pure fourth below E. Test G35B39 slightly slower than G35E44.
- 5. F#46 1 bps flat of the pure fifth above B. Test D30F#46 slightly slower than D30B39, and A37F#46 9 or 10 bps.
- 6. C#41 1 bps flat of the pure fourth below F#. Test A37C#41 slightly slower than A37F#46.
- 7. G#48 1 bps flat of the pure fifth above C#. Test E32G#48 slightly slower than E32C#41, and AC#, AF#, BG#, EG# gradually increase at about 9, 10, 11, 12 bps.
- 8. D#43 1 bps flat of the pure fourth below G#. Test B39D#43 slightly slower than B39G#48, and BD# = AF#.
- 9. A#38 1bps flat of the pure fourth below D#. Test F#34A#38 slightly slower than F#34D#43.
- 10. F45 flat of the pure fifth above B^{\downarrow} by 1 bps. Test D^{\downarrow} 29F45 slightly slower than D^{\downarrow} 29B $^{\downarrow}$ 38, and D^{\downarrow} 41F45 = B39G $^{\sharp}$ 48.
- 11. C40 1 bps flat of the pure fourth below F. Test Ab 36C40 slightly slower than Ab 36F45, and BD#, CE, DbF gradually increasing.
 - 12. G47 1 bps flat of the pure

fifth above C. Test E 31G47 slightly slower than E 31C40, and AF#, B G, BG# gradually increasing.

13. D42 1 bps flat of the pure fourth below G, and 1 bps wide A37D42. Test B\(^{\}38D42\) slightly slower than B\(^{\}38G47\), and F33A37 slightly slower than F33D42. AC\(^{\}\), B\(^{\}D\), BD\(^{\}\), CE, D\(^{\}F\), DF\(^{\}\), E\(^{\}G\), EG\(^{\}\), FA gradually increase.

14. Bass. Pure octaves. Minor third-major sixth test (EG = GE) reliable down to C16. Pure twelfths (C16G35) down to A1. Also, a gradual decrease in the beat rates of chromatically adjacent descending major thirds to A25, tenths to A13, seventeenths to D6, and minor twenty-first (D6C40) down to A1.

15. Treble. Pure octaves. One bps narrow fifths up to E56. Pure twelfths ($B^{\flat}38F57$) to C88. Third-tenth ($D^{\flat}29F33 = D^{\flat}29F45$) up to C64. Third-tenth-seventeenth (A37C \sharp 41 = A37C \sharp 53 = A37C \sharp 65) up to C76.

Well Temperament, Werckmeister Procedure

In 1691 Andreas Werckmeister, organist and composer, published Musical Temperament, or . . . mathematical instruction on how to produce . . . well tempered intonation on a keyboard instrument.

Well temperament preserves harmonic smoothness in the keys with few sharps and flats while allowing one to modulate to the brilliant keys with many sharps and flats. In well temperament, each tonality sounds different, so tonality and modulation have musical meaning; whereas, in equal temperament, every tonality sounds alike, and key signatures seem to exist in order to pointlessly increase reading difficulties as sharps and flats increase! Werckmeister was acquainted with Handel. and was a friend of Buxtehude. In 1705, Bach visited Buxtehude. In 1722 Bach published book one of the Well-Tempered Clavier, a collection of preludes and fugues in all the major and minor keys, for performance on a keyboard tuned

in well temperament.

The composer Schumann in 1834 wrote: "Thus one might observe the rising and falling (of the temperature of feeling) in the interwoven succession of rising and falling fifths, and accept F- sharp—the middle point of the octave, the so-called tritonus—as the highest point, which again descends through the flat keys to the simple, unadorned C major."

The music professor at the Conservatoire Royal de Musique, Liege, and at the Scola Musicae, Brussels, in 1919 wrote: "Take the D-flat Nocturne, Op. 27, No. ii, of Chopin. Play the first phrase as it is written and then transpose it to F. Or the first phrase of the second movement of the Sonate Pathetique, and after playing it in the original key of A flat, transpose it to A and to G. It will at once become evident that the great master's choice of tonality was not left to accident, but was very carefully premeditated."2

- 1. Tune C40 beatless to and one octave below a C fork. A^{\downarrow} 24 fork = A^{\flat} 24C40.
- 2. F45 a pure fourth above C. $A_{b}^{1}36C40 = A_{b}^{1}36F45$.
- 3. F33 a pure octave below F45, also a pure fifth below C. D_{P}^{\downarrow} 29F33 = D_{P}^{\downarrow} 29F45, and A_{P}^{\downarrow} 24F33 = A_{P}^{\downarrow} 24C40. Be aware of and ignore

the 6:4 FC fifth beating at C64.

- 4. $B^{\dagger}38$ a pure fourth to F33 and a pure fifth to F45. $D^{\dagger}29F33 = D^{\dagger}29B^{\dagger}38 = D^{\dagger}29F45$.
- 5. $E^{\flat}43$ a pure fourth above B^{\flat} . $G^{\flat}34B^{\flat}38 = G^{\flat}34E^{\flat}43$.
- 6. G#36 a pure fifth below D#43. B27G#36 = B27D#43.
- 7. C#41 a pure fourth above G#. E32G#36 = E32C#41.
- 8. F#46 a pure fourth above C#. A37C#41 = A37F#46.
- 9. F#34 a pure octave below F#46, also a pure fifth below C#. D30F#34 = D30F#46, and A25F#34 = A25C#41.
- 10. Tune D42 pure to $B_{9}^{1}38$, and then raise D so that $B_{9}^{1}38D42$ = D42F#46, both wide major thirds about 7 bps.
- 11. Tune G35 pure to D, and then raise G so that GC = GD, the wide fourth beating the same as the narrow fifth at about 2 bps.
- 12. Tune A37 pure to F33, then raise A so that FA = AD, the wide major third beating the same as

the wide fourth at about 3 bps.

- 13. Tune E44 pure to A. Ĉ28A37 = C28E44.
- 14. Tune B39 pure to E. G35B39 = G35E44.
- 15. Bass. Pure octaves. Pure fifths and twelfths on E, E^{\flat} , D^{\flat} , B^{\flat} , A, A^{\flat} , G^{\flat} , F. Minor third-major sixth test (E32G35 = G35E44).
- 16. Treble. Pure octaves. Pure fifths and twelfths on G#, A#, B, C, C#, D#, E, F. Third-tenth-seventeenth test (F33A37 = F33A49 = F33A61).

Meantone Procedure

In 1523 Pietro Aaron published Il Toscanello in Musica, which described meantone tuning, in which certain intervals, called wolves, G#D#, A^J, C, BD#, D^J, F, F#A#, beat wildly. Music composed within this system sounds best played in this tuning.

Werckmeister well temperament can be converted into meantone by retuning E^b, E, F, F[#], G[#], B^b, B, and C[#] pure major thirds to G, C, A, D, E, D, G, and A respectively.

- 1. Tune C40 beatless to and one octave below a C tuning fork. $A^{\flat}24$ and the fork beat the same as $A^{\flat}24C40$.
- 2. E44 a pure major third above C40.
- 3. E32 a pure octave below E44. E32G35 = G35E44.
- 4. G35, D42, and A37. Tune wide fourths and narrow fifths so that GC = GD = AD = AE, all beating the same at about two or three bps.
- 5. D30 a pure octave below D42. D30F33 = F33D42.
- 6. G#36 a pure major third above E32.
- 7. F33 a pure major third below A37.
- 8. C#41 a pure major third above A37.
- 9. F#34 a pure major third above D30.
- 10. B 38 a pure major third below D42.
- 11. B39 a pure major third above G35.
- 12. E 31 a pure major third above G35.
- 13. $E^{\flat}43$ a pure octave above $E^{\flat}31$. $E^{\flat}G^{\flat} = G^{\flat}E^{\flat}$.
- 14. Bass. Pure octaves. Minor third-major sixth test. Preserve the

Continued on page 27

¹Composers on Music, edited by Morgenstern, 1956. ²Modern Pianoforte Technique, Sidney Vantyn, 1919.

IT'S THE LITTLE THINGS THAT COUNT

Hammer Return Springs

Gerald F. Foye San Diego Chapter

hile tuning a piano, many problems often become apparent, including sticking or sluggish keys. Some tuners have the capability of totally ignoring such problems. Other tuners carefully mark all the offending keys with chalk, and then totally ignore them. But then, there are always a few hardheads who insist on attempting to correct such malfunctions.

Most of us have discovered the causes for sticking keys to be endless. To that end, I will take a short cut and discuss only problems relating to hammer return springs in vertical actions. Examples are springs that are broken, weak, corroded, distorted, improperly positioned, or that exhibit that unspeakable malady, the spring rail problem.

A few distorted springs can be reshaped using a spring hook in combination with long, needlenose pliers or the faithful fingers. The same method is used to

decrease or increase spring tension.

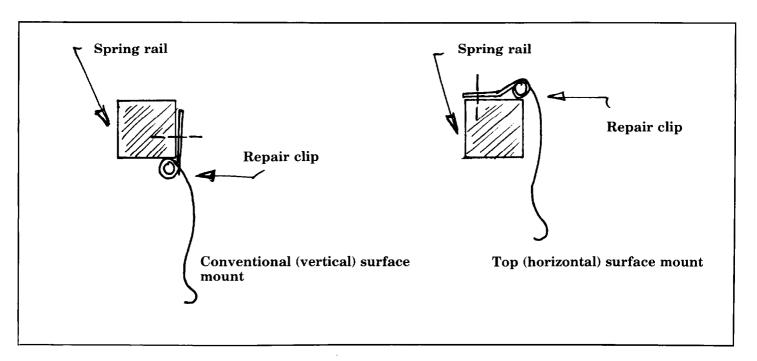
Assuming that most springs are in serviceable condition other than a couple that must be

44

Check for possible interference between hammer shank and screw head. If required, lightly file screw head. And don't tell anyone some technicians might even go so far as to carve a bit of material from the hammer shank as a last resort!

replaced, a quick repair is the "hammer rail return spring" as found in supply catalogs. It is basically a hammer return spring attached to a brass mounting clip. The clip has a screw hole, slotted for adjustment. Included with the repair spring is a small wood screw.

To install, use a screw starting awl to make a starting hole in the vertical rail surface facing you. With long tweezers and a long, thin-bladed screwdriver. start the mounting screw. Next, modify the spring length to suit and open the slot by snipping away some material. This can be done with wirecutters or even scissors. Again, using long tweezers, slip the mounting clip under the screw head, adjust height and tighten screw. (In some actions, it may be best to remove the hammer butt assembly for room to work.) Check for possible interference between hammer shank and screw head. If required, lightly file screw head. And don't tell anyone some technicians might



even go so far as to carve a bit of material from the hammer shank as a last resort!

On some hard-to-work-on spinet actions, an alternative is to mount the repair spring clip on the top surface of the spring rail. This method is more convenient and works well, provided the rail is wide enough to accept the spring mounting clip. Using the screw starting awl, make a hole about two-thirds of the way back on the top rail surface, centered with butt assembly. Install the screw as above. The spring length will very likely be correct as is, but the spring will have to be wrapped, at the coil, further forward and the mounting clip will have to be formed by bending at a 45-degree angle. See the accompanying sketch. Slip the mounting clip under screw head, adjust so spring coil is about flush with front rail surface and tighten.

Getting back to some of the other-mentioned spring problems, let's examine spring rail location. The rails are generally shimmed fore/aft with spacers such as cardboard punchings. This is to adjust overall spring tension and sometimes might be required to compensate for some clearance problems. The shims may vary in thickness at each mounting point. The rail may be misaligned due to warpage or faulty installation. Or the location may be technically correct but may be causing an interference problem with

damper levers.

Should damper levers be forced against the spring rail before the keys are fully depressed, the touch will be very heavy, even to the point of literally pushing the keys back, offering a spongy feel. This condition may be altered by reducing rail shims, providing the resultant increase in overall spring tension is not too great. Or it may be necessary to replace the spring rail felt with thinner material or perhaps to eliminate the felt entirely if all else fails. This

Very old pianos may have weak or corroded springs. New pianos may have corroded springs, badly distorted springs from improper installation, or that previously mentioned malady, the spring rail problem!

may be required throughout or in a section.

Another possible misalignment condition could be the up/down spring rail location. Should the rail be too low, the springs may bind against the main rail or, at the very least, might cause a noise problem. Should the rail be too high, the springs may not stay in the butt grooves. There is no adjustment for rail height, which makes correction difficult, especially in a spinet action. Obviously, the screws that secure the rail to the action brackets must be relocated. If the rail adjustment requirements are great enough to make a new hole without breaking into the original, then the job is easier. If not, the holes must be plugged and redrilled to suit.

Following through with some other spring-related problems, let's discuss why springs may have to be replaced! Very old pianos may have weak or corroded springs. New pianos may have corroded springs, badly distorted springs from improper installation, or that previously mentioned malady, the spring rail problem!

One cause of corrosion is due to visits from furry little critters with long tails that give us lots of extra work. Mouse urine is very effective in destroying piano wire and hammer return springs. They especially like Schwander-type actions, apparently because of the

ease with which they can romp about using the spring cords for a foothold. Aside from the obvious evidence mice leave, there may be



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New England Conservatory Department of Piano Technology Frank Hanson, chairman 290 Huntington Avenue Boston, Massachusetts 02115 Tel. (617) 262-1120. ext. 365 damaged hammer springs which tend to break or bend about midway of the spring length. Or, on Schwander actions, they may have simply destroyed the spring cord. Schwander-type actions require individual hammer butt assembly removal to correct the problem whereas actions with spring rails require rail removal.

Now, getting to the spring rail problem, you must examine the evidence carefully so as to be certain it is not a mouse problem since we want to avoid pinning a bad rap on the piano manufacturer. The spring rail problem occurs in relatively new pianos. that is, just a few years old. Using a spring hook or long tweezers, prod some of the offending springs. Should they be lifeless, hanging limply, or simply break off at the coil, then it is likely the problem. The clues are the spring breaking off at the coil and the point at which it broke likely being a grayish color, perhaps with a powdery appearance. If you find one or two, spot-check throughout the rail. If only a couple are bad, then correct using the spring repair clips as previously suggested, wait until the next tuning service and recheck. At this point, should you discover more bad springs, you have positive evidence that all the springs must be replaced.

At this point, it is wise to determine how the job will be paid for. Start with the dealer, where possible. If that is not practical, go to the manufacturer, providing they are still in business. That in itself is a problem today. If the manufacturer is still in operation, request a replacement rail. It will have the springs mounted and is a real time-saver as opposed to replacing all springs individually.

Assuming the evidence requires that all springs be replaced, the first thing to do is check either the replacement rail or the replacement springs against the existing ones to be certain they are correct. Then, remove the action.

With the action on your favorite portable table, examine for spring rail position. Make note of shim locations and make note of

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With rail screws out, rotate the rail in best position and slide out one side. At this point, if you are fortunate enough to have obtained a replacement rail, the job is simply a matter of sliding the rail back in, again rotating for best position.

If all springs are to be replaced, then a vise clamped to the work bench is very useful. Scrape off felt with a sharpened putty knife or whatever method is convenient for you. Using a sharpened awl or ice pick, pry the spring tails out of the retainer grooves. Don't destroy the grooves since they must contain the replacement springs. With flatnose pliers, raise the tails up, in line with the through holes. From the opposite side, carefully pull the tails through and try to avoid leaving broken wire in the holes since the pieces will have to be removed prior to installation of new springs. Note: on some older spring rails without holes, I find it best to drill holes using an electric drill, pin vise and a small drill bit just a few thousandths larger in diameter than the spring wire size.

Again, using the vise to advantage, insert a row of springs and align them with a guide. The guide is simply a tube or rod that will slip through a row of spring coils. The guide should be snug enough to hold the springs but not too snug or it will be hard to remove after the springs are secured. Guide material can be purchased in the form of brass tubing or rods at hobby shops. Or some of the heavier coathangers have wire about the correct diameter, which should be between 3/ 32- and 1/8-inch diameter, depending on the spring coils. Crimp the tails into the retainer grooves by pulling with flat-nose pliers. Pull as to snug the spring

in place but not tight enough to close in or distort the coil. It is important to maintain integrity of coil and keep springs as uniform as possible, like a row of soldiers. in order to end up with proper and reasonably uniform spring tension when mounted back in action. It may be necessary to further secure tails in place with a sharp putty knife or similar tool. Snip off excess, file lightly to remove sharp points. Replace spring rail felt but leave the coil cushion off since that is what caused the trouble to begin with.

To install the spring rail, rotate to best position and carefully slide rail in place. With rail shims and screws started, snug a little at a time and constantly check for springs that may bind against hammer butts or shanks. Caution is a must, or the replacement springs will become mangled. This sometimes happens in factory installations as many of us have witnessed. After rail screws are tightened, place all springs into respective butt grooves. Now the action is complete and ready to be returned to its resting place in the piano — wasn't that easy?

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Besides master classes, there are studio rehearsals, weekly concerts (some involving world premieres), and recording sessions for national and international broadcast. The technician has full responsibility for over 100 keyboard instruments, including 37 grand pianos: tuning and maintenance (rebuilding in on-campus shop), supervision of all equipment moves, recommendation of new acquisitions, supervision of the related budget and supervision of one year-round and several part-time technician assistants. Candidates must have several years of experience with concert tunings. They should have experience in a post-graduate institute, be interested in teaching and have acquired strong administrative skills.

Preference will be given to Canadian citizens and landed immigrants. Salary negotiable. Fringe benefits.

Deadline for application is May 15, 1986.

Details from the Manager, Music Programs, The Banff Centre School of Fine Arts, Box 1020, Banff, Alberta, Canada. TOL OCO

TRADE

Concerts: Rock To Symphony

Richard Hassig Tri-City, IL, Chapter

am about to leave for a scheduled tuning and I almost forgot my ear valves. That sounds crazy, but for this job I want to have them along. This piano which I am going to tune is for a rock concert and while I am not tuning I want to protect my ears from the bombardment to which they will be subjected while the sound equipment is being tested.

It is entirely possible that although my presence was requested at a specific time, they will not be ready for me to go to work at the prearranged hour. I may have to wait a few minutes, an hour, or even more. I have learned to accept this and warn whoever contacts me initially that a specific charge for a tuning will not apply, that I will charge by the hour. This serves two purposes. It ensures that I will be paid for my time, and I think that it helps prevent some wasted time. If someone knows that I will charge by the hour they will try a little harder to see that I do not spend much time just sitting around.

While I am sitting around, however, the noise is usually horrendous. That is where the ear valves come in, or should I say go in? The musicians do not necessarily stop when I am tuning, either, particularly the drummer. Some rock drummers seem to have to prove a point which has something to do with how hard they are able to strike their drums. Ear valves are nice in this particular instance, for they do help to appreciably stop a great

deal of the percussive sound while still allowing me to hear. Many times I have left the valves in while tuning the piano.

It is my impression that many piano technicians do not like to tune for rock concerts and refuse that work. Understand that I don't really like them either, but I accept the work for several reasons. I am working to earn money, and I feel somewhat ridiculous turning away a chance to do so. Although in some ways that work is disagreeable, some aspects of it are challenging. You never know, you just might meet someone very interesting. Probably not, but you might. The situa-

...

If someone is concerned enough to want the piano tuned, respects me and my work enough to ask me to perform the service, and is willing to pay my price, somehow I feel that if I have the time available, I ought to go and tune the piano.

tion, or the piano might be unusual or interesting.

If someone is concerned enough to want the piano tuned, respects me and my work enough to ask me to perform the service, and is willing to pay my price, somehow I feel that if I have the time available, I ought to go and tune the piano. I have enough feeling and dedication for my profession that that is the way I see it.

Many of the traveling groups now carry the small electric grand pianos made in Japan. I have not seen any made in the USA — are there any? Some even carry a conventional grand with them. It is easy to knock the rock musicians for one reason or several, but I do give them credit for realizing the good features of piano sound and attempting to have it. I also give them credit for wanting to have the piano tuned.

Although the electric grand is not going to give a concert sound effect, the center and treble are not too bad. The bass leaves a lot to be desired, but much of the scale is quite tolerable. Their portability and the fact that they will connect to the amplification system do make them particularly useful to the touring rock bands. A conventional piano might not be heard without amplification.

I would never have thought that a pair of earphones would be a part of my tuning tools, but using a good pair is an ideal way to tune the electric grand. Regular earphones will not work. You need a pair with a built-in power supply. The piano does not generate a strong enough signal to enable a conventional headset to work. Wearing the earphones, you are considerably isolated from surrounding noises, and you can adjust the volume to suit. I think that somehow the sound is more realistic this way, than if it is coming from a speaker somewhere behind you.

Sometimes getting about on the stage can be interesting for a sightless person. There are bound to be a lot of cables and stuff around, and the piano will probably be in a tight place. Most of the stagehands here know me and look out for me pretty well. For that matter, I have found that most of the groups have some nice people and they are helpful also. Of course, maybe they just want to get rid of me.

I remember the concert when the stagehands could not immediately locate the rolling stairs needed to get me onto the high stage. They thought they would have to bring me up with a forklift. The stairs were finally located so I missed out on that.

Perhaps my most interesting exit from a concert was one at the local fairgrounds. I went to tune the piano, which turned out to be two pianos, and then was ready to leave. I had assumed that when I was finished I would telephone my wife to come and pick me up. I then discovered that there was not a telephone available to me. As I said, the stagehands look out for me pretty well. They found a willing deputy sheriff and my tools, my cane and I rode out on the back of his motorcycle to the neighborhood McDonalds restaurant where I made my phone call. It must have been quite a sight.

Afterward, I sort of wished that I had asked the deputy if he would consider driving to our house — it would not have been much further — and touching the siren just a little as we came to our driveway. My young sons would have been amused at that.

I have tuned in a wide range of concert situations from rock to symphony and things in between. Our sons are interested in the names of the rock groups for whom I tune, but the others they care not at all for. Does that sound familiar to anyone?

	Fi	gure	5
--	----	------	---

Thirds in order of increasing flats and sharps	Werckmeister beat rates	My favorite beat rates
C28E32	2	4
F33A37	3	4
G35B39	6	6
B ¹ ,38D42	7	6
D30F#34	4	6
E ^b 31G35	8	8
A37C#41	9	8
A ¹ 37C40	13	8
E32G#36	7	8
D 29F33	9	8
B39D#43	10	9
F#34A#38	12	10

Temperaments . . .

purity of major thirds, tenths, and seventeenths based on CE, B,D, AC#, GB, FA, EG#, E,G, DF#.

15. Treble. Pure octaves. Preserve the purity of major thirds, tenths, and seventeenths based on DF#, EbG, EG#, FA, GV, AC#, BbD, and CE.

My Favorite Well Temperament Procedure

The advantages of this tuning over the Werckmeister procedure are a smoother increase in brilliance with an increase in sharps and flats; and more harmonious agreement in the fastest major thirds. All fourths and fifths are still smooth at less than three bps. (See Figure 5)

- 1. Tune C40 beatless to and one octave below a C tuning fork. $A^{\flat}24$ and the fork beat the same as $A^{\flat}24C40$.
- 2. C28 a pure octave below C40. $C28E^{1}_{31} = E^{1}_{31}C40$.
- 3. E32 4 bps sharp of the pure major third above C28.
- 4. E44 a pure octave above E32. Test C28E32 = C28E44.
- 5. Tune G#36 a pure major third above E32, and then raise G# until E32G#36 beats the same as A\(^336C40\), both major thirds wide about 8 bps.
- 6. A37 4 bps sharp of the pure major sixth above C28. EA and AE pure.
- 7. F33 4 bps flat of the pure major third below A. FC smooth.

- 8. C#41 8 bps sharp of the pure major third above A. G#C# smooth.
- 9. C#29 a pure octave below C#41. C#29E32 = E32C#41. Db 29F about 8 bps.
- 10. Tune D42 a pure major sixth above F. Then raise D so that F33D42 beats the same as E32C#41, both wide about 6 bps. AD smooth.
- 11. D30 a pure octave below D42. D30F33 = F33D42.
- 12. B¹, 38 6 bps flat of the pure major third below D42. FB¹ smooth.
- 13. F#34 6 bps sharp of the pure major third above D30. F#C# smooth. F#A#38 should beat about 10 bps.
- 14. Tune B39 a pure fourth above F#34, then raise B until F#34B39 = B39E44, both fourths wide about 1 bps.
- 15. Tune G35 6 bps flat of the pure major third below B. GC and GD smooth.
- 16. E^b31 8 bps flat of the pure major third below G. E^bA^b and E^bB^b smooth.
- 17. D#43 a pure octave above D#31. D#31F#34 = F#34D#43. B39D#43 should beat about 9 bps.
- 18. Bass. Pure octaves. Minor third-major sixth test (BD = DB).
- 19. Treble. Pure octaves. Third-tenth-seventeenth test (C28E32 = C28E44 = C28E56).

Related Reading

Equal temperament — White: Piano Tuning and Allied Arts, 1917.

Meantone and well temperament — Jorgensen: Tuning the Historical Temperaments By Ear, 1977.

Getting The Organizational Spirit

Fortune's Favorite Children

M. B. Hawkins Vice President

here is little doubt as to why the Piano Technicians Guild can stay high on organizational spirit. We find ourselves among the relatively small number of businesses, professions and trades that fit well into a quote made several years ago about work by the late Winston Churchill. It goes like this: "Those whose work and pleasure are one are fortune's favorite children."

Isn't that neat? We are indeed among fortune's favorite children when we view the two most common worker complaints as reported by noted pyschologist Norman Feingold. What he hears most frequently from workers is their inability to get along with the boss and a feeling of being trapped in an unsatisfying job. David Oldfield, director of the Psychiatric Institute Foundation's Midway Center for Creative Imagination, says one of the "profound challenges for our generation is to learn the lesson our grandparents learned only when they retired. They're telling us: Don't make the mistake we made. Learn to smell the flowers as you go along."

"The people who are happiest," says psychologist Feingold, "are those who fuse work and leisure—they're teaching or doing research or writing. They are doing the thing they love to do, and getting paid for it." I ask, does this sound familiar? It seems to me we fit into this picture perfectly.

Through the centuries, there have been many words written on work. I have pulled a few together to share with you here.

Without work, all life is rotten. But when work is souless, life stifles and dies. — Albert Camus.

Work and play are two words used to describe the same thing under differing conditions. — Mark Twain.

The less I work, the less I enjoy it. — Sen. William Proxmire.

To rest is to rust. — Bandleader Lester Lanin.

I don't like work — no one does — but I like what is in work — the chance to find yourself. — Joseph Conrad in "Heart of Darkness."

To earn one's bread by the sweat of one's brow has always been the lot of mankind. At least, ever since Eden's slothful couple was served with an eviction notice. The scriptural precept was never doubted, not out loud. No matter how demeaning the task. No matter how it dulls the senses and breaks the spirit, one must work. Or else. Lately, there has been a questioning of the "work ethic," especially by the young. — Studs Terkel in "Working."

No technique for the conduct of life attaches the individual so firmly to reality as laying emphasis on work; for his work at least gives him a secure place in a portion of reality, in the human community...And yet, as a path to happiness, work is not highly prized by men. They do not strive after it as they do after other possibilities of satisfaction. — Sigmund Freud in "Civilization and its Discontents."

I find these statements very interesting and hope you do also. Our daily occupation along with chapter technicals, seminars, conferences and conventions, provide us a fantastic opportunity to work, learn more and be sociable at the same time. Let's keep these things high in our consciousness as we encourage others to join us in our richly rewarding lifestyle.

Remember the words of Winston Churchill. "Those whose work and pleasure are one are fortune's favorite children."

Monthly Membership Report

New Members

Region 1

Boston — 021 Ford, Gary L. 25 Peterborough, Apt. 29 Boston, MA 02115 (Registered Technician)

New York City — 101 Goodrich, Peter B. 22-80 Steinway, Apt. 3-F Long Island City, NY 11105 (Associate) Southern Tier, NY — 139 Lyford, Andrew J. Route 2, Box 53 Oxford, MY 13830 (Registered Technician)

Philadelphia — 191 Sierota, Patricia A. 5201 Whitaker Ave. Philadelphia, PA 19124 (Student)

Region 2

Washington, D.C. — 201 Petley, John 4501 Highland Ave. Bethesda, MD 20814 (Student)

Pamlico, NC — 278 Corbett, James S. Route 3, Box 115 Grifton, NC 28530 (Registered Technician)

Region 3

Northwest Arkansas — 727 Reid, Mary Ellen Rt. 3, Box 206 Russellville, AR 72801 (Student)

Oklahoma — 731 Bruce, Gary L. 609 Kay Hill Lane Edmond, OK 73034 (Student) Latture, Samuel V. PO Box 60925 Oklahoma City, OK 73146 (Student)

Dallas, TX — 752 Klinkerman, Steven C. 11606 Lochlynn Dallas, TX 75228 (Registered Technician)

Texoma — 763 Reynolds, Robert K. Jr. 5215 St. Helena Drive Wichita Falls, TX 76310 (Student)

Houston, TX — 771 Bruce, Sandra S. 7302 Heards Ln. S15 Galveston, TX 77551 (Student)

McGary, William E. 500 Aron Baytown, TX 77520 (Student)

Roberts, Orval E. 166 Coach Lamp Ln. Houston, TX 77060 (Student)

Region 4

Central Illinois — 625 Hale, Clark T. 13 East Imboden Dr. Decatur, IL 62521 (Student)

Region 5

Twin Cities, MN — 553 Berman, Laura M. 3228 E. 24th St. Minneapolis, MN 55406 (Student)

Schleyer, Michael C. Jr. 7557 Scott Ave. No. Brooklyn Park, MN 55443 (Student)

Hutchinson, KS — 675 Cooley, Phillip C. 129 East 11th Hutchinson, KS 67501 (Student)

Denver, CO — 801 Kelley, Sean A. 4760 W. Princeton Ave. Denver, CO 80236 (Registered Technician)

Region 6

Vancouver Island — 012 Anderson, James F. 1700 Sheridan Ave. Victoria, BC Canada V8P 3B3 (Registered Technician) Utah Valley — 846 Travis, J. Eldridge 1600 N. 576 W. Orem, UT 84057 (Apprentice)

Las Vegas, NV — 891 Gass, Samuel R. PO Box 18414-29 Las Vegas, NV 89114 (Student)

Kollar, David K. 3225 S. Pecos, Apt. 219 Las Vegas, NV 89121 (Student)

Santa Barbara, CA — 931 Mortilla, Michael D. c/o University of California at Santa Barbara Attn: Dance Dept. Rona Sande, Chairperson Santa Barbara, CA 93106 (Apprentice)

Portland, OR — 971 Sayler, Clyde H. Route 2, Box 28 McMinnville, OR 97128 (Apprentice)

Muth, Gervase Lynn PO Box 11703 Portland, OR 97211 (Student)

Eugene, OR — 974 DeLapp, James A. 1225 S. 8th, PO Box 409 Cottage Grove, OR 97424 (Student)

Reclassifications

Region 3

N. Cent. Louisiana — 713 McCleskey, Gerald W. 9607 Birdwell Lane Shreveport, LA 71118 (RTT from Apprentice)

Dallas, TX — 752 Ello, James M. 1657 Morrison Garland, TX 75040 (RTT from Student)

Region 4

Cincinnati, OH — 452 Becker, Lawrence 114 Dayton Pk. Dayton, KY 41074 (RTT from Apprentice) Lansing, MI — 489 Henry, Karen-Jane 679 Butternut Dr., #401 Holland, MI 49423 (RTT from Student)

Waukegan, IL — 600 Overboe, Ellerth 9421 Drake Ave. Evanston, IL 60203 (RTT from Apprentice)

Correction

In the November Journal's membership listings, Patrick K. Ervolina of Sanford, FL, was incorrectly listed as a Registered Technician instead of a Student.

Member Recruitment Points June 1, 1985 — Feb. 1, 1986

o unc	-, -		1 000 1, 1000		
	Pts.	Mbrs.		Pts.	Mbrs.
Agnello, Joseph	4	1	Jorgensen, Owen	11	3
Allen, Owen W.	1	1	Keen, Kerry A.	4	1
Anderson, Richard	6	$\dot{\tilde{2}}$	Langlois, Ira T. III	1	ī
Bailey, Benjamin N.	š	3	Leary, Janet	4	î
Baird, John H.	ĭ	1	Lieberman, Carl	5	ī
Baker, Elizabeth A.	1	1	Lovgren, Christine	5	1
Baldassin, Rick L.	4	1	Macchia, Allen J.	4	1
Ball, Charles K.	5	1	Marinelli, Robert A.	3	1
Barber, Edward D., Sr.	15	3	McGuire, Michael R.	5	1
Barr, David J.	1	1			
Beck, Robert W.	1	1	McMorrow, Edward J.	3	1
Bessette, Roland	8	3	McNiel, Thomas	1	1
Betts, David C.	5	1	Morris, Jere F.	1	1
Blees, Willem	5	1	Morton, W. Don	2	2
Bondurant, Gary A.	5	1	Musser, Robert E.	1	1
Boone, Danny L.	1	1	Neie, Gary A.	4	1
Brady, Stephen H.	6	2	Nelms, Gary A.	2	2
Bremmer, Ernest B.	5	1	Odenheimer, Fred	1	1
Briggs, Arthur R.	1	1	Oliver, Stanley	7	3
Carey, Marcel Chadwick, James D.	8 1	$\frac{2}{1}$	Onesti, Ralph	$\frac{2}{5}$	2
Clayton, Paul E.	1	1	Overboe, Ellerth	о 1	1 1
Coberly, R.L.	1	1	Palm, Stanley J.	5	1
Connell, Walter K.	6	$\overset{1}{2}$	Pennington, David L. Perkins, Robert K.	1	1
Conrad, Robert	1	1	Pitts, Floyd D.	5	1
Cook, Charles M.	5	1	Potter, Randal F.	1	1
Crabb, Larry B. Jr.	1	1	Preuitt, Ernest S.	19	5
Dante, Richard	ī	ī	Probst, Dale E.	1	1
Delpit, John A.	4	ī	Quint, Richard	ì	î
Denham, Douglas	1	1	Radd, Dorothy J.	1	1
Dowling, Edward D.	5	1	Raskob, Richard K.	5	1
Draine, Patrick	1	1	Reed, G. Timothy	8	4
Drost, Michael A.	1	1	Reuter, Raymond A.	2	2
Duncan, David R.	1	1	Rice, Paul	3	1
Ellis, Jim	5	1	Roy, Thomas E. Jr.	5	1
Enoch, Norman	1	1	Russell, Robert J.	6	6
Foli, Donn G.	1	1	Sanders, John B.	4	1
Gagnon, Noel J.	1	1	Sanford, Ronald R.	3	1
Garrett, Joseph A.	5	2	Scott, H. Dennis	5	1
Geiger, James G.	1	1	Shroyer, Alvin M.	5	1
Goetsch, Lawrence T.	7	7	Sierota, Walter	9	3
Griffith, M.L.	1	1	Smith, Sheldon D.	4	1
Griffiths, Dan	1	1	Snyder, Stephen H.	$\frac{2}{1}$	$\frac{2}{1}$
Grossman, Matthew R.	5 5	$rac{2}{1}$	Steege, David J. Swafford, Kent E.	4	1
Guerra, Edward T. Gugala, Gary A.	о 1	1	Taylor, David G.	1	1
Gurlick, Philip J., Jr.	1	1	Teel, Carl W.	2	2
Gustafson, David E.	9	3	Trautman, Marty	5	ĩ
Hanson, Frank C.	4	1	Travis, John W.	5	$\dot{\hat{2}}$
Harding, Claude M.	10	$\dot{\tilde{2}}$	Tremper, Fred W.	4	1
Harmon, Clayton C.	1	ī	Trivelas, Chris A.	1	1
Hartley, Sandra M.	$\bar{4}$	ī	Wagner, Lloyd J.	4	1
Hebert, Leonard J.	2	2	Welton, T. Scott	4	1
Hennessy, Frank P.	1	1	Wiant, Benjamin F.	5	1
Hines, David M.	5	ī	Wigent, Donald E.	5	1
Hodgkins, Fred M.	5	1	Wintsch, Walter F.	5	1
Hopland, Ray	4	1	Wolfe, Robert	4	1
Hornbeck, Stephen E.	1	1	Wondra, Lola L.	1	1
Howell, W. Dean	2	2	Yick, Wm. H.	1	1
Jones, Henry L.	1	1	Zeringue, Nolan P.	1	1

The Auxiliary **Exchange**

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Corresponding Secretary 5201 Whitaker Avenue Philadelphia, PA 19124

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Cultural Focus On Las Vegas

This article is for those who are under the mistaken impression that Las Vegas is a cultural wasteland. Nothing could be further from the truth. Las Vegas has more cultural activity than many cities three or four times its size.

They can boast, for example, of the excellent Las Vegas Symphony; a 110-piece student symphony; a civic ballet company; the Las Vegas Opera Company; a community drama workshop; a musical theater workshop; plus a number of community theater groups, art exhibits and art study groups. Just during the month of November, there were four plays running concurrently, several ballet performances, five concerts and 18 different art exhibits — and that was just in the month of November!

The Allied Arts Council publishes a slick monthly magazine titled "Arts Alive." In addition to the events scheduled for the two-

President's Message

The New Year began in a non-traditional fashion when, on New Years Eve, I received the shocking and disturbing news that our President, Louise Strong, was critically ill and in the intensive care unit of Emory Hospital in Atlanta, GA. I am delighted to report she is making a miraculous recovery and as this is being written in mid-January, continues to progress and expects to leave the hospital within a few days to return

home to convalesce.

I have spoken with her and she assures us all that she will be back at the helm as soon as possible. I know that she would enjoy hearing from you. I am certain that it was the prayers and thoughts of those of you who were aware of this sudden illness that helped bring her through this major crisis. We continue to pray for her speedy recovery.

Ginger Bryant Vice President, PTGA

month period, it contains interesting articles about local artists and events.

The Allied Arts Council sponsors a non-profit organization called "Cultural Focus," under the directorship of Elizabeth Warren. Among other things, they package tours for groups such as ours. They are making all of the arrangements for both the Guild and PTGA. Ms. Warren will present a program at our opening PTGA assembly.

"Glitter Gulch" isn't all there is to this rapidly growing city. Those of you who might be thinking of staying home this year because racy shows, loud music and 24-hour casinos aren't your "thing" might wish to reconsider. Study the program and you may realize that there is much more in Las Vegas for you than is ever depicted on TV. And this is only a small part of the program. There are many more surprises that we cannot reveal at this time since they are not yet firm as to details.

Convention Preview

Whether or not you participate in games of chance, you are sure to be a winner at this year's Las Vegas convention. There is so much to choose from that it is difficult to decide which of the many tours available would be best for PTGA. Liz Warren, director of "Cultural Focus," a non-profit organization which operates under the auspices of the Allied Arts Council of Southern Nevada, suggested we put together a combination tour of our own. We have. Our tour will meet at 9:30 a.m. and proceed to the Ethel M. Chocolate fac-

tory. There we will tour the facilities and the beautiful gardens that were planted expressly for the enjoyment of candy magnate Forrest Mars. In this garden, emphasis and focus is directed to the cacti an exquisitely beautiful plant form when properly cared for and landscaped. From there we proceed to Sam's Town, where the shops specialize in Indian Jewelry, arts. crafts, leather goods, etc., presented in an "early west" setting. We then go the the University of Nevada-Las Vegas for a tour of the campus and a catered luncheon. A highlight of the campus tour will be the new music department and a short "recital" by a music student to demonstrate what many believe to be one of the world's finest acoustically designed halls. The final stop on the tour will be the Liberace Museum to view his collection of rare and unique pianos, classic automobiles, and his legendary million-dollar wardrobe. Throughout the tour we will be passing the homes of the "rich and famous" whenever the route is on or near

One thing definitely set, however, is an optional tour that will be available to both PTG and PTGA on one of our free evenings. A few miles outside Las Vegas is Spring Mountain Ranch State Park. The ranch was originally owned by "Lum" of the long-running radio show "Lum and Abner," who later sold it to the divorced American wife of German munitions magnate Adolph Krupp. Both maintained this park in its pristine condition and the purchase by the Nevada State Parks guarantees

that Spring Mountain Ranch remains unsullied, therefore depicting Nevada as it was in the early days.

During the summer months, cultural events ranging from Shake-speare to Broadway musicals are "staged under the stars." We arrive there in time for a stroll through the park and then have our picnic supper on the grass below the stage with the performance beginning at dusk. The program for this summer is now being developed and will be announced as soon as it is known. One fee (also to be announced) will cover your bus, entrance to the park, picnic supper and the show.

People Like To Be Asked

PTG conventions, meetings and seminars can be overwhelming for us spouses, especially the first few times. Nearly all of us have recollections of the first time our spouses encouraged us to attend a function and then went off to join the other technicians, leaving us to fend for ourselves in a hotel lobby or a room full of unfamiliar faces. Many people tell of practically being pushed into an Auxiliary meeting room — literally.

Fortunately, most of us can chuckle about these experiences now that we have crossed the threshold and made some friends for ourselves among the other PTG people. However, it will serve us well to remember our early days of trepidation because that same

experience is happening anew to someone else.

Most of us feel that we belong now because someone along the way befriended us. Some people are better at befriending than others, even though we are probably all better at it than we think we are. Ginny Russell stands out as a person who makes a habit of befriending newcomers. Lots of people credit Ginny and her winning ways for getting them involved in the Auxiliary or the Guild. If you watch Ginny at a function, you will see she notices who is sitting alone or who is looking bewildered. She has a knack for getting people talking and getting them involved.

It doesn't take the skill of a Ginny Russell to make an outsider feel at ease. A couple of easygoing questions or a shared observation can break the ice. The hard part is prodding yourself to approach someone you don't know. Walt Sierota tells about helping himself get acquainted at his first annual convention. He would look for someone who appeared to be more of a newcomer than he was and he would introduce that person to all the important people he saw. Some of the important people were also meeting Walt for the first time!

You don't need to be on an official welcoming committee or an elected officer to make somebody feel welcome. Neither should we leave it up to those people to do all the welcoming.

Very few people attend our meetings or conventions in groups. If you see them with a cluster of people, it's probably because they did some icebreaking themselves a little earlier.

I hope you will decide it's worth it to do some icebreaking yourself at the next meeting you attend. The results are twofold: you make someone else feel comfortable and have an opportunity to make a new friend or two. People like to be asked. What you ask them is not as important as the fact that you are extending yourself to them and letting them know you'd like to listen to what they have to say.

Julie Berry

Christmas In July

Without the usual "hubbub, hustle and bustle" oftentimes associated with the Christmas holidays, you are invited and reminded to share in our stress-free "Christmas in July." Santa has agreed to make a special trip from the North Pole to join us for the drawing of the train — Larry Crabb's Barber Shop Chorus will entertain us from 5:30 until 6 when the drawing will take place. Reports are coming in from Ohio, Wisconsin and Minnesota, as well as California, giving just a hint of the innovative items they will be contributing. Don't be left out — the profit from the sale of this project will make the Auxiliary both known and proud.

Morality And The PTG

From the Detroit Windsor Newsletter

Dear Sirs:

I recently attended the Piano Technicians Guild convention in Kansas City. I was most impressed with the professionalism your organization *seems* to have. The people I met were very friendly, courteous and kind. I was also impressed with the international flavor of the convention. But the tide turned when I was at the membership booth...

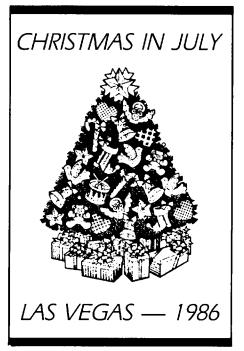
While leafing through one of your *Journals*, there, in bold print, in the table of contents, read "Auxiliary Exchange." I had to read it twice. I couldn't believe my eyes! Sirs, I cannot and will not be a dues-paying member of any decadent organization that swaps wive!!

Disappointedly yours, Paulene A. Ough

Fact? Or Fiction?

If fact, please come forward, Paulene, so we may defend our "Exchange." If fiction, also come forward so we may applaud your sense of humor!

Editor



Index of Display Advertisers

Advertiser	Page	Advertiser	Page
The Banff Centre	25	North Bennett Street School	12
Robert Conrad	3	Pacific Piano Supply	5
Cunningham Piano Co.	9	Pennsylvania State Seminar	25
Dampp-Chaser Electronics	3	The Piano Man	32
Decals Unlimited	9	Pro Piano	6
Steve Fairchild	6	Sacramento Valley Chapter	3
C.A. Geers Co.	5	Schaff Piano Supply Co.	1
Grayson County College	5	Shenandoah College	25
I. Jacoby	34	O.E. Shuler Co., Inc.	$\overline{14}$
Jensen Tools Inc.	6	Superior Instructional Tapes	34
Inventronics, Inc.	24	John Travis	34
A. Isaac Pianos	34	Tuners Supply Co.	3
Kawai Pianos	\mathbf{IF}	The Vestal Press	6
Lee Music Mfg. Co., Inc.	6	Western Iowa Tech.	14
The Lunsford Alden Co.	6	Wholesale Piano Co.	9
New England Conservatory	24	Wurlitzer	BC

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ING Substantial improvement over any published method. Clearly written instructions. Easy-to-learn routine. Designed for use with Hale Sight-O-Tuner - can be adapted for others. \$10.00. Don Hardin, 2620 Cypress Ave., Stockton, CA 95207.

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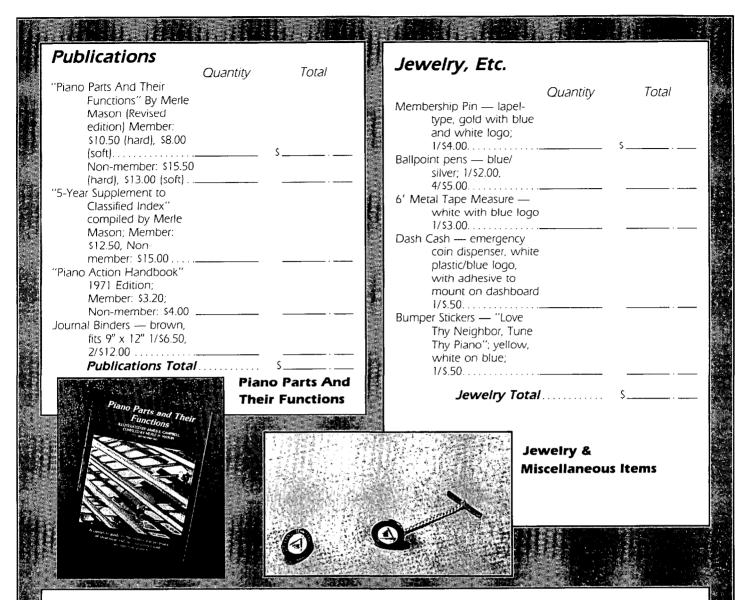
P.O. Box 218, Station A, 308 Betty Ann Drive, Willowdale, Ontario, Canada M2N5PO. (416) 226-1171.

A. Isaac Pianos

Coming Events

Date	Event	Site	Contact
Mar. 7-9 1986	North Central Louisiana Seminar	Regency Motor Hotel Shreveport, LA	Charles Richey 112 E. Robinson St. Shreveport, LA 71104
Mar. 13-15, 1986	Pacific Northwest Conference	Red Lion Inn Bellevue, WA	Steve Brady 22808 35th Ave. West Brier, WA 98036 (206) 543-0543 (206) 771-7781
Mar. 14-16, 1986	Central West Regional Seminar	St. Louis, MO	Rohnn Kostelecky 923 Pike St. Charles, MO 63301 (314) 946-2483
April 4-6 1986	Pennsylvania State Convention	Harrisburg, PA	James N. Hess 511 Miller Ave. Mechanicsburg, PA 17055 (717) 790-9670
April 9-12 1986	Music Educators National Conference	Anaheim, CA	MENC 1902 Association Drive Reston, VA 22091 (703) 860-4000
April 18-20, 1986	New England Regional Seminar	The Lowell Hilton, Lowell, MA	Nancy Walker Parry 125 Hartford Street W. Natick, MA 01760 (617) 653-2747
April 19, 1986	Los Angeles Seminar	Los Angeles, CA	Claudia Ellison 3137 Voltaire Dr. Topanga, CA 90290 (818) 348-4735
May 10, 1986	Northern California Seminar	Davis, CA	Yvonne Ashmore 12700 LaBarr Meadows Grass Valley, CA 95949 (916) 273-8800
May 16- June 6, 1986	Study Tour of Europe	East & West Germany, Austria Czeckoslovakia	Dan Evans 4100 Beck Ave. Studio City, CA 91604 (818) 762-7544
June 14-17 1986	NAMM Music Expo	Chicago, IL	Bob Russell 1414 Lander Rd. Mayfield Hts, OH 44124 (216) 449-5212
Yuly 21-25 1986	Piano Techicians Guild Annual Convention and Institute	Caesars Palace Las Vegas, NV	Home Office 9140 Ward Parkway Kansas City, MO 64114 (816)444-3500

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