Piano Technicians
Journal
March 1983

Piano Technicians Guild Convention
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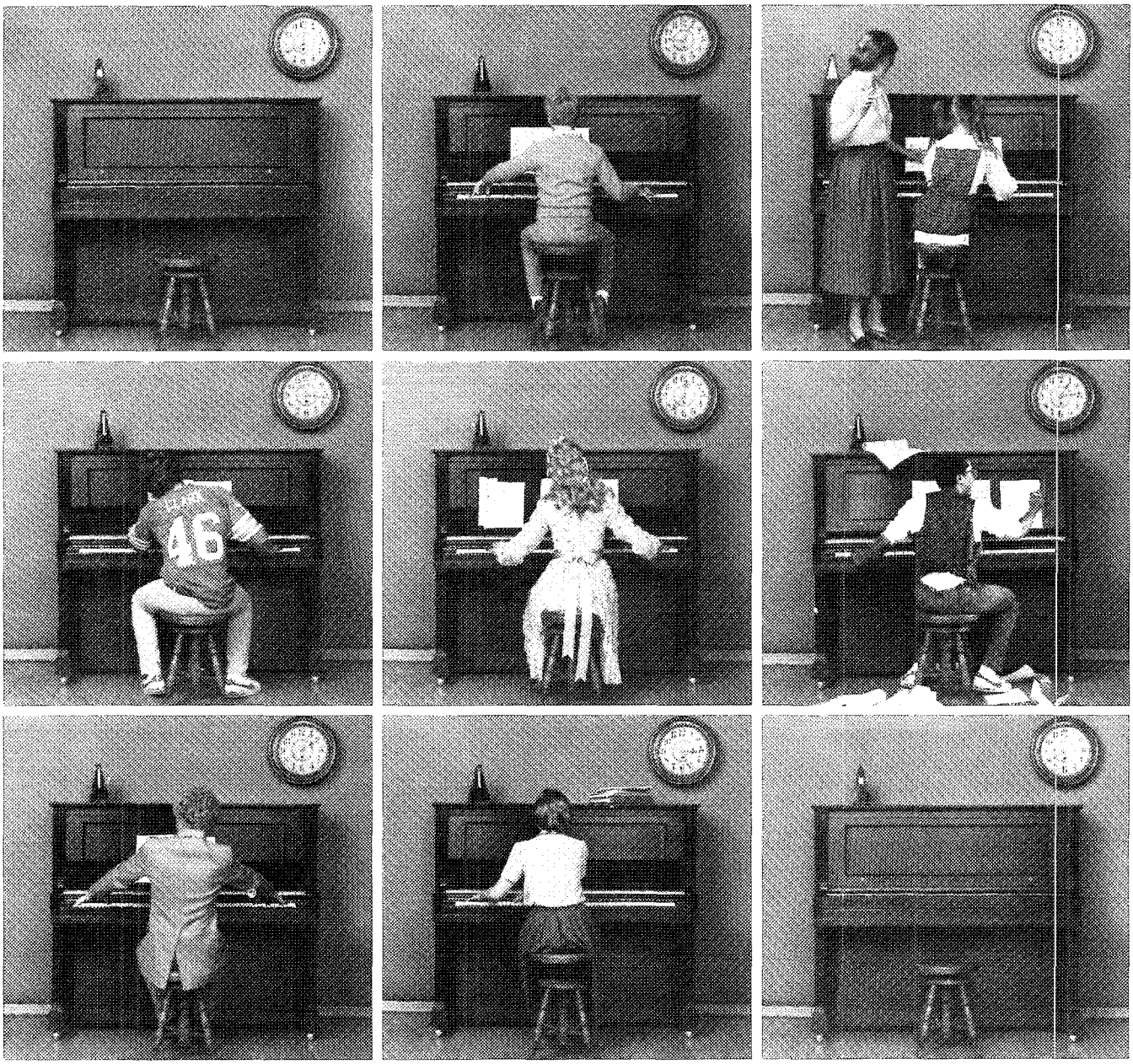

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March 1983
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Cover: The stringing process of the Kimball Viennese Edition Professional Grand Piano is shown on the cover. The initial tension is applied to the plate and inner rim assembly. Bass stringer Jeff Kendall demonstrates how the strings are added in sequence using half-gauge wires. This process is followed by the first stage of tuning, known as chip tuning.

Photo by John Carnes.

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Editorial

Don L. Santy
Executive Editor

Like a lot of people, I am an avid collector of tidbits of information on almost every subject. I dump them in a drawer and occasionally drag them out into the light of day and browse through them. Each time I do that, I toss a few away.

I never get ahead of the game, though, because many more enter the so-called file than ever see the waste basket. When the drawer gets full I am forced to begin collating and assembling them into some sort of reference file. I now have an amazing collection of trivia. When doing a lot of public speaking they come in handy as fillers, and now that I do some writing for our various publications they once again are proving their worth. Thought I'd pass on a few so that you can cut them out and add them to your own collection of trivia.

HELPFUL HINTS FOR WRITING LETTERS AND BULLETINS

1. Don't use no double negatives.
2. Make each pronoun agree with their antecedent.
3. Join clauses good, like a conjunction should.
4. About those sentence fragments.
5. When dangling, watch your participles.
6. Verbs has to agree with their subjects.
7. Just between me and you, what you put in there is important to.
8. Don't write run-on sentences they are hard to read.
9. Don't use commas, which aren't necessary.
10. Try to not ever split no infinitives.
11. Its important to use your apostrophe's correctly.
12. Proofread your writing to see if you any words out.
13. Remember correct speling is esential.
14. Avoid cliches like the plague.
15. Don't indulge in intricate elaboration of the unmistakably obvious.
16. Eschew obfuscatory morphemes.

Their ain't no use in writing no more, you wouldn't remember no how.

Recently I came across the following item illustrating the latest trend in "bureaucratese" and organizational parlance:

It's in the process. We forgot about it until now.
We'll look into it. Meanwhile, you may forget it, too.
Take this up at our next meeting. That will give you time to forget.
Project. A word that makes a minor job seem major.
Program. A project requiring more than one telephone call.
Under consideration. Never heard about it until now.
Under active consideration. We're trying to locate the correspondence.
We're making a survey. We need more time to think up an answer.
The members say. The last one who called up.
Let's get together on this. You're probably as mixed up as I am.
We can go over this at lunch. It's time we ate on your expense account.
Reliable source. The man you just met.
Informed source. The guy who told the man you just met.
Unimpeachable source. The fellow who really started the rumor.
Activate. Make more carbons and add names to the memo.
Implement. Hire more people and expand the office.
Consultant. Almost any man with a briefcase more than 50 miles from home.
Star salesman. Someone from the home office with a special discount.
Note and initial. Let's spread the responsibility.
Forwarded for your consideration. You hold the bag for a while.

Some time ago, while reading the Cincinnati newsletter — a veritable treasure house of interesting tidbits — I found the following political resolutions:

Ronald Reagan: I resolve to clarify duties and responsibilities in the administration. Maybe I should adopt my predecessor's reorganization ploy of retreating to the ranch and coming back to ask the whole Cabinet to resign.

Tip O'Neill: I resolve to revitalize the Democratic Party by promising higher taxes.

David Stockman: I resolve not to take reporters to lunch any more, to refrain from uttering the words "Trojan horse," and to investigate the possibility of a trickle-up economy.

Jerry Falwell: I resolve to give no further interviews to girlie magazines.

Jane Fonda: I resolve not to accept more than $1.5 million for my next movie running down the greed of the businessmen.

Just to give you something to worry about I came across the following not long ago:

ROBBING PETER TO PAY PAUL

Taxpayers have long suspected it, but it took a set of economists at Ford Motor Company to come up with proof that there are more people being supported by tax dollars than there are workers in the private sector to support them.

Adding up government employees, the military on active duty, the disabled and unemployed, the retired and those on welfare, Ford economists found a total of 80,655,000 tax dependents compared to 71,650,000 non-government workers.

Now that's what I call "half the population taking in wash for the other half." Here's one that will tickle a technician's funny bone. A version of the well-known MURPHY'S LAW that may sound familiar:

MURPHY'S LAW

The following is a list of corollaries to Murphy's Law. Read and wince.

* It is impossible to make anything foolproof because fools are so ingenious.
* Interchangeable parts won't.
* Any wire or tube cut to length will be too short.
* Identical units tested under identical conditions wil not be identical in the field.
* After any machine or instrument has finally been fully assembled, extra components will be found on the bench.
* A dropped tool will land where it can do the most damage (also known as the law of selective gravitation).
* Components that must not and cannot be assembled improperly will be.
* Any error that can creep in, will. It will be in the direction that will do the most damage.
* All constants are variable.
* In any given computation, the figure that is most obviously correct will be the source of error.
* The most logical way to assemble components will be the wrong way.
* In any given miscalculation, the fault will never be placed if more than one person is involved.
* Dimensions will always be expressed in the least usable terms.
* After the last 16 mounting screws are removed from an access plate, it will be discovered that the wrong access plate has been removed.
* The probability of a dimension being omitted from a set of instructions is directly proportional to its importance.

Letters

Dear Mr. Santy:

The October 1982 issue of the *Journal* included an article in which Steve Fairchild advocated the occasional use of his "Altered Equal Temperament." What Fairchild failed to mention was that his particular temperament was a system that has long been common practice among many harpsichordists. Far from being Fairchild's own concoction, the system he advocates has been described several times since the eighteenth century. It is best known as the Thomas Young Temperament of 1800.

From talking with some of my colleagues, I have the impression that Fairchild has been advocating this system for some time now. Apparently, he has in other instances cited the historical nature of this system, although such a reference was not to be found in his write-up in the *Journal.* (Fairchild's other claim to fame is that of being the "world's fastest tuner.")

Discussion of and instructions for the Thomas Young Temperament are included in the standard reference work of our trade, Owen Jorgensen's *Tuning the Historical Temperaments by Ear* (Marquette, Michigan: The Northern Michigan University Press, 1977), pp. 322-329.

The Thomas Young Temperament is a good one for the reasons given by Fairchild. More practical alternatives are available, however. I would suggest using the Equal-Beating Aron-Neidhardt Well Temperament or else Werckmeister's Correct Temperament No. 1, beginning on pages 313 and 307 respectively in Jorgensen's book.

I applaud Fairchild's thoughtful application of a historical temperament, but I feel that some mention of the historical origins should have been included. I expected to see discussion of this in a subsequent issue of the *Journal,* but none has appeared so far. Don't you agree that the readers should be informed of the historical origins of the temperament which they may otherwise mistake for Fairchild's own?

Sincerely,
Steven R. Manley
Coordinator of Keyboard Technology
Wichita State University

President's Message

Ernie Preuitt
President

To agree with someone of little intelligence is no big deal, but to be compatible with the intellect sometimes makes one feel he/she, too, has just a little "smart." I feel much that way when I read that George Bernard Shaw once said, "You see things as they are, and you ask Why? But I dream things that never were, and I ask Why Not?"

If our daily routine is the same old thing day after day and we are content, if we see no reason to improve our standard of living or improve our skills, and we see things just as they are, there seems to be no reason even to ask "Why?" On the other hand, if we want to improve the above mentioned, what could be wrong with a little dreaming and ask "Why Not?"

There are many axioms in our way of thinking, some good, some not so good. Good or bad, what could be wrong occasionally to challenge these axioms? For example, "Let well enough alone" — "It's always been this way and always will be" — "You can't make a silk purse out of a sow's ear" — "It was good enough for my pappy, and it's good enough for me" — "Better late than never." These are some of the axioms that deserve to be challenged. You can think of more if you try.

Should we let well enough alone? To leave things as they are means that we are just coasting along, and when we are coasting we cannot go any direction but down. If the top of the hill is your destination, then you must improve on things as they are now. Don't be afraid to try. Only a coward would believe that things must remain as they are, just because they have always been so. If "things" have been "that way" for quite some time, you can bet it is time to change. Do a little research, and ten-to-one says your conclusion will be that it need not always "be that way."

And whoever said what they did about silk purses and sow's ears never saw some of the basket cases that we as piano technicians have resurrected. After a devastating tornado in Topeka, Kansas in the early seventies, Augie McCollum and Tony Novinski made a silk purse out of a sow's ear when a Model L grand was rescued after falling three floors and being under water for days. Once I reconstructed an old pump organ that a lady brought to me in the trunk of her car. (Yes, the lid was closed.) In both cases it took a lot of guts and somebody had to have some money, but all parties had that which was necessary, and something bad was turned into something good.

I've heard it said many times and in many places, and there is even a song that says "It was good enough for my pappy, and it's good enough for me." Well, it's not good enough for me. My pappy worked hard but didn't have as much as he deserved. I expect, and want, to work hard, but I would hope the payoff would be a little better. One of the few axioms I am personally a little reluctant to challenge is "Better late than never."

Three thousand-plus members of the Piano Technicians Guild should be thankful for all the "pappys" that have gone before us, but we certainly should not rest on their laurels. They did much in their day, probably because they too worked for change. Just because we change something that our predecessors started doesn't imply disrespect, but that we have the foresight to dream a little, and are not afraid to challenge the axiom.

The International Scene

Fred Odenheimer, Chairman
International Relations Committee

As I sit here in my backyard on this beautiful Sunday, January 9, 1983, with a gentle breeze going and some rustling in the trees, my thoughts wander ahead to Japan, springtime, cherry blossoms and meeting of old friends and acquaintances. This will be our third trip and it evokes memories of past times.

Sure, we are looking forward to the meetings, both business and technical, and we are confident, with the hard work of the convention committee at JPTA, this will be a good conference and there will be progress in the world organization. We are looking forward to seeing the factories, ever larger, with more modern equipment. But more than that we are looking forward to seeing people, friends of the past, and new friends to be made. There will be one person we are sorry we will not be able to see again, Mr. Utsunomiya, father of Kenzo and Seiichi, a gentle old gentleman, a wonderful craftsman, who, true to the tradition of piano men, worked to his last days, tending *his* instruments, the pianos of his clients.

We had some encouraging happenings just before Christmas: A phone call from Germany and letters from England and Australia. They all pointed toward participation and we hope this will become a reality. Our group from the Piano Technicians Guild, now counting about 45, should have swelled to perhaps 50 or 60 by the time you are reading this. This will be a good representation from our organization. For many travellers it will be their first trip to the orient and it will be a most impressive experience.

According to "Das Musikinstrument," the Guild of German Piano Builders will have their annual tuning competitions for apprentices March 19, 1983. The ones for northern Germany will be held at the Schimmel factory in Braunschweig, the ones for southern Germany at the Bechstein factory in Eschebronn. These competitions have been held for a number of years, and should give the budding craftsman an incentive to excel.

If you have not become a member of "Friends of IAPBT" do so now. Yearly membership is only $15.00 and your support means a great deal to the fulfillment of international fellowship.

Letters

Dear Mr. Santy,

Thank you for the very inspiring letter to Piano Technicians Guild members in the January issue of the *Journal.* I don't mean to say that the others were less inspiring. But this one touched me enough to renew my faith in my fellow citizens and boosted me out of a low spot where I found myself the past few weeks. Tendonitis struck my right wrist and revisited the left elbow at the busiest time for tuners. Perhaps my tuning days will be over sooner than I thought, but changing professions is not new to me, and if necessary I'll do it again. It might be more difficult at 57 than it was 14 years ago, when I was an organist.

Your philosophy of life crystallized from an honest and hard life. I would rather say good life than hard — how many of us can survive affluence? Who can remain immune to the corrupting influence of power? Only those who believe in and recognize a higher law and authority than the human kind of rules and millions of laws with millions of loopholes.

We would need no judges, lawyers, codes of ethics etc. if we followed just that one great admonition: Love one another.

My best and heartfelt wishes to you for a healthful New Year, for enough time and inspiration for at least a hundred more editorials — why not write a book? I'll order 20.

Kind regards.
Godfrey Tomanek

THE TECHNICAL FORUM

Jack Krefting,
Technical Editor

We continue to hear about the dreadful condition of institutional pianos, even instruments in music schools where the faculty and administration would be expected to have some understanding of the maintenance needs of pianos. In some college and university situations one technician is expected to tune and maintain scores or even hundreds of pianos, most of which are in sore need of regulating and other maintenance, to say nothing of the instruments that need rebuilding. Somehow, schools are able to find the money to buy new pianos by the dozens, but can't find the money to maintain them. The technician is told to do the best he can, so he concentrates his efforts on recital and faculty pianos, and the rest are of necessity ignored or, at best, given a quick tuning once or twice a year. I saw one instance in a state university where two- or three-year-old fine grands in practice rooms were actually breaking jacks because the key dip, under continual heavy use, had increased to nearly half an inch! Informed of the situation, the dean of music replied that he had made the decision to purchase new instruments primarily because, being new, they would not require maintenance like older pianos would, and that his technician was too busy with concert work to do any regulating of practice instruments. "If these pianos don't hold up," he said, "we'll buy another brand next time." The man had a talent for selective listening, apparently, because he hadn't heard a word I'd said. One wonders whether his attitude would be so cavalier if he were spending his own money rather than that of the taxpayers.

Whether it represents simple ignorance or something more than that, this attitude toward maintenance is not limited to large, state-supported schools. One of our correspondents sent the following letter addressed to him from a small, private college in Michigan:

"Thank you very much for responding to our request for a bid from you for the tuning and maintenance of the _____ College pianos for 1982 — 1983.

"The successful bidder was _____ of Spring Arbor whose bid was for $20 per piano for regular tunings, and no charge for Concert tunings or for parts and labor for piano maintenance.

"We appreciate very much your interest in tuning for us and we will most certainly give you the opportunity to bid again in the future."

The letter was signed by the chairman of the music department, who was probably congratulating himself on having gotten such a good deal. In reality, by accepting such a bid, he has made sure that the school pianos will receive little or no maintenance this year; it would be fatuous to assume otherwise, since competent people do not work for nothing. It follows, then, that the successful bidder is either incompetent or dishonest in that he won't really do any work other than tuning; either way, it looks like the school will get just about what it is paying for. Worse yet, now that all the unsuccessful bidders know what it takes to get the bid, they will all offer the same non-service next year, so those pianos won't be maintained then either.

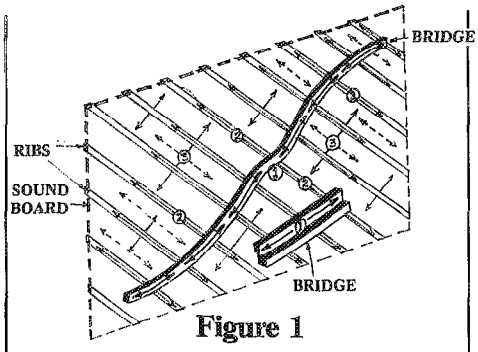


Figure 1

Vertical Rebuilding

As promised last month, we will discuss soundboard shimming in this space. Confusion abounds, unfortunately, about how and why we shim; one well-known text on a related topic even advocates spreading the crack rather than cutting it, using a shimming tool backwards, on the premise that this would increase the crown. What that does, of course, is increase the incidence of compression ridges or multiple cracks next to the shim after a year or two. Crushed wood is pulpy and lifeless, lacking the resilience to expand and contract normally with the seasons, and when you spread a crack you crush wood cells.

Our purpose in shimming is not merely to fill in the open space for cosmetic reasons, although that is often a consideration, especially in view of the fact that cracks are generally thought to be disastrous by the layman; there is a residual continuity of vibration across the grain of a board which promotes radiation, less efficiently than that of the ribs but of significance nonetheless, that prevents us from declaring shimming as an entirely cosmetic operation. The primary conductor is the bridge, as shown in **Figure 1**, followed by the ribs and then the board. This is not to say that the diaphragmatic action of the board is diminished in any sense by the relatively greater emphasis placed on distribution, because they are both vital and the latter must occur first.

To restore the piano, we are going to put new wood wherever old wood is either cracked, displaced or crushed. To do this, we must cut some of the wood on either side of the cracks. If the grain is straight and the technician is a woodworker, the job can be done quickly with almost any cutting tool, even a well-honed pocketknife. In the real world, however, the grain won't always be straight and the technician is often a better tuner than woodworker. Power tools can be the answer.

Figure 2 illustrates the use of a fence, which can be any straight piece of wood or other material clamped to the board parallel to the crack. Using a tapered router blade, such as the one available at Sears, the crack can be opened with an ordinary router. Better yet because of its compact dimensions is a laminate trimmer, a small router-like tool designed to trim Formica edges on countertops. Whatever blade is selected, use that angle when cutting shims on the tablesaw; it's a lot easier to tailor the shims to the blade than to find a blade that matches the shim angle.

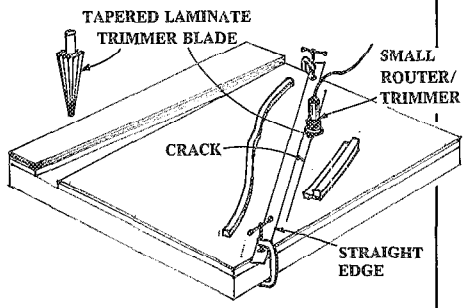


Figure 2

If hand tools are used, be sure to watch the grain. If it is rising or falling, the crack may be cut in one direction only. **Figure 3** illustrates that point, together with the fact that if the shim is fitted so its rising grain is facing the same direction as that of the board, trimming will be much easier.

It isn't quite as easy as it sounds, of

course, and while some boards are a breeze, others will be tough. Consider, for example, a board in which the grain rises toward an obstacle, such as a bridge or the side of the case. If the obstacle is not to be removed, the crack must still be cut even though the usual shimming tool cannot be used without damaging the board. In this instance, the power tools previously described would be of little use either, because of working clearances. Sometimes a good, sharp knife or razor knife is the best answer. Hold a metal straightedge, such

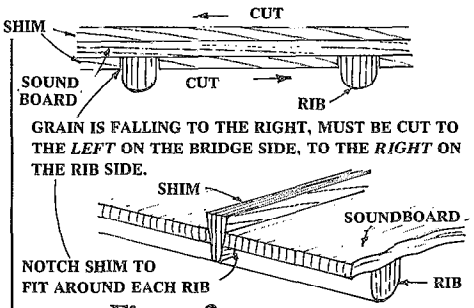


Figure 3

as the blade of a trysquare, along the edge of the portion previously cut. It should extend all the way to the obstacle, as shown in **Figure 4**. Cut both sides in this manner, being careful to maintain the angle. That is the hardest part, because even the slightest variation will result in a void beside the shim, on one side of the board or the other, and that's what we want to avoid. As close to the obstacle as possible, cut the crack sides together in an arc. Cut or sand the shim so that one end looks like the bow of a boat, as shown in **Figure 5**, and dry-fit it to the crack. When it fits perfectly, and check both sides of the board to be sure that it does, mark shim and board with a pencil as illustrated in **Figure 6** so that when the glue squeeze-out obstructs the view of the fit, one can be confident that there are no voids.

Dry-fit all shims before gluing any of them, and keep the heat on while shimming; otherwise, especially in humid weather in an uncontrolled environment, the board will absorb so much moisture that the opened cracks will partially close. If that happens, all that was gained by drying the board down is lost, and the board will likely crack again next to a shim within two years.

It's a good idea to press shims into position with light go-bars, remembering to block up the ribs from below for firm support, but if go-bars aren't available there are other means of assuring a good, tight joint. One is to use weights, such as boxes of tuning pins, and another is a rim clamp similar to the device shown in our June 1982 issue. That was designed for a grand piano, but the idea is adaptable to verticals as well. Incidentally, for those who wish to review shimming articles published after our Classified Index came out, the March 1979 issue covered this in some depth, as did the December 1980 issue.

Be prepared with the glue and clamps so that all shims can be installed quickly. Line up each shim with its reference mark on the board, and when all shims are glued they should be clamped or weighted somehow. Tapping them into position has some merit, but has the disadvantage that when one shim is being tapped, the resultant vibration causes another to become loose again.

It is important not to trim the shims right away, because even if they were of the same moisture content as the board, they aren't now; the moisture in the glue has caused them to swell, and if trimmed too soon the shim will eventu-

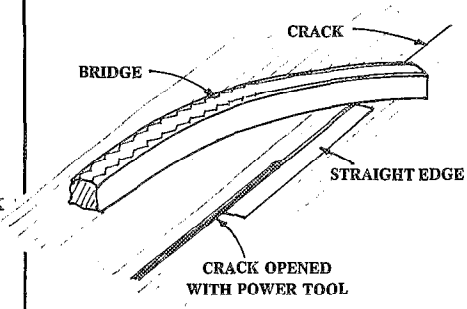


Figure 4

ally sink beneath the surface, as shown in **Figure 7**.

If the shop is climate-controlled, let the shims dry for about a week before trimming; if not, and if the environment is humid, it may be necessary to re-introduce heat to the board to aid in drying. Be sure to remove any wedges that may have been placed between ribs and backposts, otherwise the board could crack when it dries.

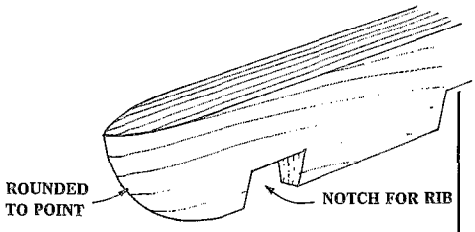


Figure 5

Shimming chisels are available from supply houses, but those I have seen are not very well made. My favorite tool for trimming is a ¾" cabinetmaker's chisel, honed very sharp so it will cut rather than split the wood if the grain drops unexpectedly. One of the reasons technicians sometimes have trouble with trimming is that they use a blade that is too thick, too dull, or coated with glue, or else they push it directly along the length of the shim. The blade should be sharp enough that it will cut the shim at a 45° angle without disturbing the grain. One can then trim the shims flush even if the grain drops right next to an obstacle.

Trim the backside with at least as much care as the front, knowing that it will be more visible in a vertical piano. When it is smooth on both sides, fine sand or scrape with a cabinet scraper. Remove all traces of sanding dust and coat with 3# cut white shellac that has been tested for drying ability. It should dry in an hour or less, but give it two or three hours and then recoat, after smoothing the surface with sandpaper or steel wool and removing all traces of dust and steel particles. Finally, flow on a coat of varnish when the shop is clean and nobody will be walking around to stir up dust. Varnish takes about 24 hours to dry hard, so this operation has to be scheduled in view of other shop projects.

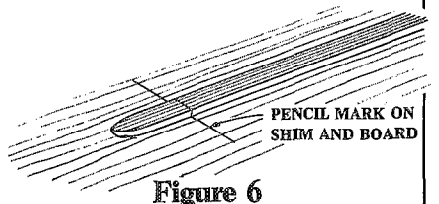


Figure 6

Replacing Knuckles

QUESTION: *"Does it pay to replace only the knuckles on grand shanks? If so, what is an easy way to remove them?"*

— Calman Rothstein
Brooklyn, New York

ANSWER: First, I would suggest a general appraisal of the piano, considering any repair procedure in light of the overall picture. One factor would be the value of the piano, before and after, and another would be the willingness of the owner to spend money on it. Most pianos deserve better care than they receive, but a few junkers that have sentimental value are in the opposite category. The technician should coldly evaluate the hard facts, leaving the customer with good information on which to base a decision. He will add whatever sentimental value he places on the instrument to the equation, never fear, and either way the technician comes out clean. If he is then hired he gets the work, and if not he gets a reputation for knowledge and honesty; the former pays this month's bills, and the latter pays for his retirement.

Next I would suggest an evaluation of the performance of the piano. If the tone is bad, either in an area or overall, I would carefully inspect the soundboard, strings, hammers, bridges and strike point. Don't assume that the reason a piano sounds bad is that the hammers need to be replaced, regardless of how bad they look. That could be the least of the problems. Check crown and bearing, and slide the action in and out slightly while playing certain notes in the treble, just to see whether the strike point is correct. If the hammers have been hung too close to the capo bar, and sliding the action further in causes the sharps to hit the fallboard, then it will be necessary to replace the shanks even if they are in great shape.

If the hammers are good and the strike point is correct throughout the scale, then maybe the technician should consider saving the shanks. Considering the centerpinning and the brittleness of the shanks, along with everything else, a decision will have to be made. Another thing to consider in a reconditioning job, as opposed to a rebuild, is the fact that flattened knuckles can be partially restored by the addition of bushing cloth under the buckskin, provided of course the latter is in good condition otherwise. A narrow strip, no more than ¼" wide, can be pulled under the flat part to partially restore its radius.

I have seen several knuckle removers, some of which have been designed for that purpose by Guild members who like to make tools, but I have to say that most of these are not effective. The best tool I have used is a large bolt-cutter, which is like a large end nipper. This tool is now available at Schaff and American, and possibly other supply houses as well. Even this tool, the best of the lot, will break shanks if not used with great care, so the technician is well advised to temper enthusiasm with finesse. Even so, four or five shanks will probably be broken by the time all knuckles have been removed.

The remnants of old glue should be cleaned from the shank slots, and each new knuckle should be dry-fitted, so that they are not inadvertently installed backwards. The nap should face the hammer tail; that is, the knuckle should feel smooth when stroked toward the hammer, and rough when stroked toward the flange. This ensures maximum power and repetition, because the

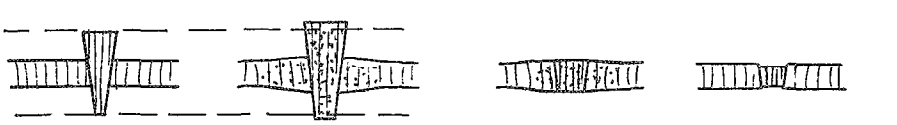


Figure 7

jack tends to stay under the knuckle longer if it has to exit against the grain; but at the same time we want the re-entry of the jack to be as frictionless as possible so we don't have to induce lost motion to get repetition.

CHICKERING DAMPERS

Our same correspondent has asked about another topic:

". . . on an old Chickering grand I was puzzled about the damper wires. They were threaded. I could find no way of removing them or to adjust them up and down short of dismantling all of them . . ."

First of all, the upstop rail must be raised as far as it will go. This allows clearance to raise a damper so that it may be turned. Turn it clockwise for later lift with the key, and counter-clockwise if it is already too late. One must make a full 360° turn, of course, and if a finer adjustment is needed it will be necessary to shim or burn the key end felt. It is possible to scrape the damper levers, but since the bottom of the lever is generally considered a reference point, it is better to adjust the thickness of the felt on the end of the key.

The above procedure will work in the middle of a section; but what of the end few dampers in each section, where they are so close to the plate struts that they cannot be turned? Those dampers must be tipped on their wires so that one end of the damper head is pointing toward the ceiling to be twisted, after which they can be tipped down again. It is a trial-and-error process, and sometimes the wire becomes loose in the head because of the movement, necessitating glue sizing of the damper head. It wasn't a great system, but it could and did work.

For further discussion of this topic, please refer to our March 1981 Forum.

AUXILIARY TUNING DEVICE

The U.S. Patent Office is filled with patent applications for fine tuning devices for pianos, most of which were filed by non-technicians who had tried to tune a piano and blamed their lack of success on design deficiencies in the instrument rather than skill deficiencies in themselves. Since I have held this post, only four and a half years, I'll bet I have talked to 25 would-be inventors who have an idea to make piano tuning easy. Most of them assume that tuning pins cannot be adjusted with precision simply because they themselves cannot do it; one would think that these musicians would know better.

Five or six people have come to me with devices based on the violin fine tuner in the tailstock, all of whom have been highly educated, ignorant and sincere. We seem to be continually fighting the uninformed assumption that postgraduate degrees in music automatically confer tuning skill upon the holder of the degree. These same musicians would sneer at the idea of a piano tuner trying to interpret music, and maybe at times that sneer has been justified, but more often it is the other way around.

One of the fine-tuning devices is pictured and described by Joe Meehan:

". . . in the first photo we see a downward view of the pins, auxiliary pins, and hammers covered by a wooden rail. Can't figure exactly why the rail. Number two photo shows two sets of pins. Lower pins seem to act as an adjustable agraffe. The third picture is an overview after reconditioning.

"Pretty weird piano, hard to tune because you can tune so fine you never want to stop! [I] told customer I'd try to get another opinion as to why Guild went to so much trouble with the extra pins. Any opinions would be appreciated . . ."

— **Joseph Anthony Meehan**
Gardiner, Maine

Photo 1

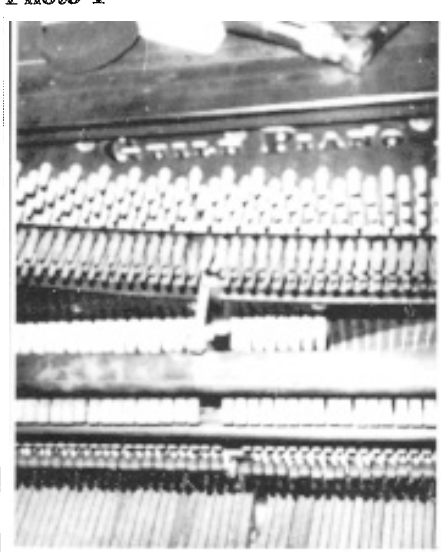
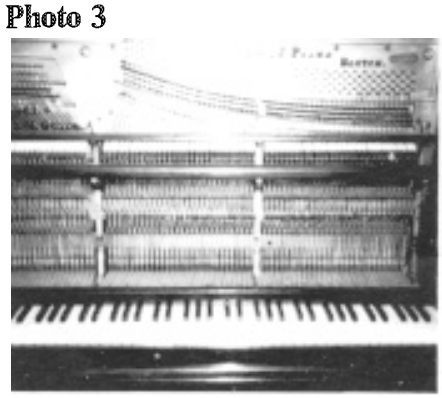


Photo 2

Photo 3



I think if one were simply in the business of merchandising pianos, it would be in one's best interest to try to keep the quality up, the price down, and the maintenance minimal. Manufacturers have probably at times felt that they could sell more pianos if they could assure their customers that little or no maintenance would be required. Failing that, it would be helpful to sales if they could at least say that necessary maintenance could be accomplished by the owner of the instrument. Fine-tuning devices like this are usually the result of an attempt by a musician or a manufacturer to make a piano tunable by a layman. Regardless of the degree of control added by such a device, and regardless of the number of times a particular idea is re-invented, the skilled tuner will always have work, if for no other reason than that the average person hasn't the patience to put up with even listening to a piano being tuned, let alone doing it himself. The Wegman block never caught on, nor did the Mason & Hamlin screw stringer, at least in part for the same reason.

NEWSLETTER TECH REPRINT

The following is reprinted from *The Piano Wire,* newsletter of the Dallas Chapter. The topic is tuning forks, and the author is Newton Hunt:

Do you know, for absolute certain, that your fork is on pitch?

Time, temperature, dropping, rust, or hitting on a hard object like the plate can cause a tuning fork to go FLAT.

To make matters even worse, I have tested brand new forks that were as much as one and a half cents flat.

In this time when we are trying to tune to as little as .25 (¼) cent, we cannot afford to be caught with our forks 2 to 20 times below our accuracy goal.

First find an absolutely impeccable source of pitch and/or an electronic tuning aid capable of 1/10 cent accuracy and test your fork WHEN THE TEMPERATURE OF THE FORK is just cool against the side of your neck. This is one of the most thermally sensitive areas of your body. When you know that your fork is in tune at a specific temperature you can then dependably duplicate that temperature and pitch by warming the fork between your hands or lowering it by laying it on the plate of the piano.

Secondly, if your fork is flat you must carefully file BOTH tines equally until it comes up to the desired pitch at the required temperature.

Perhaps the last tuner did not tune that piano where it was but had a flat fork and didn't know it.

If you know that your fork is flat and by how much and you know how to compensate then you have no real problem, except you never know when it will be further out than you think. All forks should be tested at least once a year.

Forks should never be hit on anything harder than your knee. If you hurt your knee, then you are hurting your fork and since it is by our forks we live, it then behooves us to give them the care they deserve.

GADGET OF THE MONTH

Francis Mehaffey has done it again. His latest invention is an adjustable bridge pin punch which not only makes three punch marks simultaneously, but makes them at varying spacing to accommodate the scaling of virtually any piano. This tool, illustrated in **Figure 8**, is capable of duplicating any three-hole bridge unison by means of four Allen screw adjustments. The upper two screws hold the outer legs apart, while the lower two hold them together. The spacing may be adjusted to an infinite degree, almost, although there is a fair amount of lost time in making adjustments. Its main value, according to Francis, is that it obviates the necessity for having two or three punches to accommodate the normal fan in the lower part of the scale. It does this job very well.

Also illustrated in the same drawing is a Plexiglass square, scribed and drilled for three bridge pins. This was taken from a Willis Snyder bridge class several years ago, and has some advantages even though one jig accommodates only one hole spacing. For one thing, because of the cross of scribe

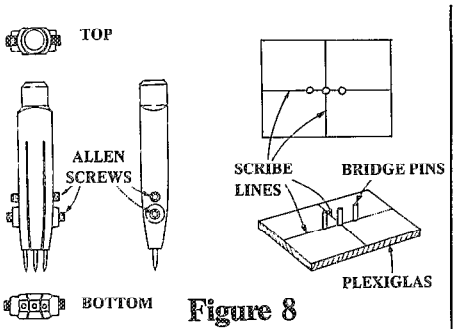


Figure 8

lines, it is easy to line up so the notch will be exactly perpendicular to the strings, simply by lining up the center scribe line with the agraffe. And since it is transparent, one can easily locate the precise speaking length according to marks on the cap. Once the fixture is located, one tap with a hammer on the bridge pins establishes the location of the holes.

Our thanks to Francis and Willis for these ideas.

TECHNICAL TIPS

"Dear Jack,

"This is an idea I recently came up with when I needed to install several new brass butt plates and was having difficulty aligning the screw holes and getting the screw started straight. Tweezers and long nosed pliers just weren't holding the plate securely enough.

"The way I solved the problem was to put a SMALL amount of rubber cement on the end of my finger and glue the butt plate to it. Then I could position the plate perfectly which meant the screw went in straight and the plate didn't rotate as the screw turned. It takes less than a minute to replace each butt plate using this method.

"Many times I have ideas that I intend to write you about, but it seems I procrastinate so long it never gets done. This time I decided it was not only ap-

propriate, but timely as well since this month's *Journal* includes an article on brass flange rail repairs. . ."

— **Nancy Hazzard, RTT**
New York City Chapter

"Dear Jack:

"May I suggest you write an article on the use of wood screws? Maybe using pictures to clarify. When replacing a screw, a craftsman will automatically start the screw by turning it counterclockwise a little. If it goes hard, it may be cross threaded. Back up and start over.

"When the screw is up snug, stop. Don't overdraw. When the screw cannot go in deeper, turning it more will only ruin the thread in the hole.

"When drilling a screw hole in hardwood (maple, etc.), it is preferable to use a tapered drill, or for large or long screws use two sizes. The neck should not be tight. The screw part should be the size of the core. The depth of the hole should be almost the length of the screw. For large screws that turn hard, use a little soap or V.J. lube.

"Use caution on brass screws. They break easily. If the slot has broken out, cut the slot with a hack saw. To start a rusted screw, tap it with a hammer on the screwdriver handle.

"For overdrawn screw holes, lead is by far the best thing to plug the hole. Use old player piano tubing. Lead is self lubricating. It will never get so tight that it can't be turned. The lead will press into the rough part of the wood and it will not fall out when the screw is removed.

"The next best thing available is the copper wire from replacement bass strings. Caution: don't get too much copper in the hole or you may not be able to screw it all the way in and if you have turned it hard, it may not turn back out. It's like salt. You can always add more if necessary.

"A long necked screw makes a good replacement for a broken hitch pin. Taper by filing, cut off the threaded part and head and drive it in. Drill or punch out the old stub."

— **Herman Koford**
Los Angeles, California

READER COMMENT

"Dear Jack:

"Reference is made to the November 1982 'Tip of the Month' from Bill Balamut of the Twin Cities Chapter about suspending a grand stack upside down in an action cradle to swing test the hammer flange centers.

"I have used this technique with success for a few years and like it very much. There is one item I would caution technicians about, however. As the stack is inverted, the wippen drops forward so that the repetition lever rests on the drop screw. Very frequently, when the hammer is swung, the square end of the shank (back at the flange) will brush lightly against the drop screw cushion on the repetition lever giving a false indication of center pin friction. The easiest way I have found to alleviate this problem is just to hold each whippen assembly back out of the way as its hammer is swung. Otherwise, this cradle-suspension of the stack for the swing test is a great idea and a real time saver!"

— **H. Gene Wilkison, RTT**
Long Beach, California

IN CONCLUSION

Please send all technical material intended for publication to me at this address:

Jack Krefting, Tech Editor
Piano Technicians Journal
3802 Narrows Road
Erlanger, KY 41018

Our thanks to all of this month's contributors.

THE TUNER

Paul Monroe, RTT
Orange County Chapter

TUNING BELOW THE TEMPERAMENT

The intent of this article is to highlight some of the problems we encounter every day when tuning below the temperament octave and to share some of the methods I use that may be helpful to you.

Before getting to the heart of this subject let's talk a little about the equal temperament. It is the central pivot point of a well tuned piano and we could get into a discussion that could last for months, so let the following definition suffice by saying that a temperament octave is made up of twelve equally spaced semitones. Therefore as we progress up or down the keyboard the same intent should be our goal: evenly spaced intervals with semitone frequencies changing by a consistent ratio.

To learn more about temperaments there is a book available to all of us that was written by a scholar, a musician, a composer and a piano tuner. The book is comprehensive in describing how we arrived at the equal temperament we have today. I urge all of those who haven't read the book to do so. The book I am referring to is by Dr. Owen Jorgensen and is titled *Tuning the Historical Temperaments by Ear.*

Those of us that have been tuning for any length of time are cognizant of the problems in tuning that are created by changing from plain wire to wound strings and moving from bichord unisons to unichord unisons. Pianos that have the shorter strings have greater problems than those with longer strings, *i.e.*, spinets vs. grands. The longer the strings the less the problems.

The note on which the piano changes from plain wire to wound strings varies from one manufacturer to another. It may range from B2 on a grand to A3 on a short console. Generally, quality pianos will change below F3. This helps a great deal when setting the temperament. The necessity of compromise is minimized.

Back to the temperament. If you have tuned the temperament so that the F3—D4 Major 6th is beating at a rate that is less than the G#3—C4 Major 3rd and faster than the G3—B3 Major 3rd, continue using this pattern until the beat rates are no longer usable. This pattern is called "outside 6ths, inside 3rds." With a great deal of experience, I think you will find that it is faster and more accurate to tune octaves in this manner than to play the octave. Special Note: The piano must be strip muted.

Using this pattern is only the beginning. After tuning note E3 using this method, double check your accuracy by comparing the beat rate progression of the Major thirds above this interval. They should be even in their progression.

Use the Major 6th—10th test to check the interval of a 5th. Use the Major 3rd—10th test to check for the octave as you did when you tuned above the temperament. You may find that the beat rate of the Major 3rd and 10th will be the same or close to it. Also check the even progression of the Major 10th, 6th and 3rd intervals. After you have established a pattern for the above it should take you no more than a few seconds to check the accuracy of the note you have just tuned.

Continued on page 26

After Touch

David Pitsch, RTT
Utah Valley Chapter

50 Point Guide To Grand Regulation Part XXIX

Combined steps #43 check damper lift from key (½ dip) & #44 check damper lift from lifter rail

The regulation of the damper levers involves checking for evenness of the levers for proper sostenuto tab adjustment, how high the levers are for proper damper lift from the keys, and how evenly the levers lift from the lifter rail. Since these three aspects are inseparable, steps #43 & 44 are combined for this discussion.

The time to worry about how well the sostenuto system will work is when the damper levers are regulated to obtain proper lift fom the keys and lifter rail. The first principle to remember is that the levers *must* be perfectly level in the rest position. This will give a straight line for the sostenuto tabs, which is vital for the sostenuto system to function properly. Once the tabs are level, it is simple to adjust the sostenuto knife.

Never, never adjust the height of a single damper lever to correct for improper damper lift from the key or from the lifter rail unless the offending lever is not level with the others. Individual adjustment of damper lift from the key or from the rail is made by altering the thickness of the lifter felts. If the piano being regulated is brand new or at least new enough that the lifter felts are not worn, then proceed to adjusting the evenness of the damper levers. If the piano is older, especially if the instrument is being rebuilt, replace the key lifter felts and the damper rail felt. Failure to replace worn lifter felt will surely result in lost time and big headaches.

The only way to replace the damper rail felt is to remove all of the damper wires (see last month's discussion) and also remove the damper rail itself. Replacement felt should be of similar thickness and of sufficient density, like understring felt. While the lifter tray is out, lube the pivot bearings and return spring. Reinstall the lifter tray and damper wires. As was explained in step #42 last month, the damper wires *must* ride freely through the brass inserts in the damper levers. If the hole of the brass insert has been aligned and the wires still do not pass freely, reduce the size of the damper wire by light filing.

To regulate the height of the damper levers while maintaining a perfectly level line, I have a homemade aluminum square 1" x 1" x 46". At each end of this square are holes large enough to let a threaded rod pass through. The rods are screwed into a wooden base. Nuts and washers are placed above and below where the rods pass through the square. This jig can then be placed inside the piano on the keybed directly underneath all of the damper levers. The piano action can also be placed where it normally goes, this jig not interfering since it is back under the levers!

Sample damper wires are screwed tight to their levers, making sure that the levers are too low in height from where they should be. These sample wires are at the extreme ends as well as selected places through the middle of the action. The nuts on the threaded rods are then screwed up or down to raise all of the damper levers higher or drop them lower as needed. The proper height for the lifter rail is found by installing the action and checking the damper lift from the keys. Usually this is adjusted so that the lifter felts on the back of the keys engages the damper levers at ½ the key dip. This specification can be changed a little up or down to make the action feel a little heavier or lighter as desired. Just remember that the point of engagement must be soon enough to lift the dampers high enough to clear the strings. Also remember that altering the way the ac-

tion feels by adjusting the point of damper lift from the keys is ineffective when the pianist plays with the sustain pedal down!

When the correct damper lever height is found, remove the action and tighten all of the damper wire screws so that the dampers are seated on the strings and the bottom of the levers just touch the aluminum square. If the damper heads move while tightening the wires, take a pair of pliers and twist the wires so that the damper heads are aligned to the strings. The screws should be quite tight. You do not want the heads to be loose enough to be able to get out of alignment after a few months of playing.

At this point all of the damper levers should be perfectly level at the bottom, and all of the sostenuto tabs in a straight line. The point of damper lift from the individual keys and from the lifter rail can now be checked. The procedure for correcting too early or too late lift is the same whether it be for the lift at the keys or at the rail. If the felt needs to be thicker, shim with paper underneath. If the felt is too thick, simply remove a layer or two with a sharp knife (best for key lifter felts) or use a hot blade and scorch the felt (best for the rail). On some pianos altering the thickness of the felt is unnecessary.

Many European style actions have spoons which can be bent slightly up or down to regulate the lift from the keys. These and other actions also have capstans or let-off type buttons to regulate the individual lift from the lifter rail. If the above procedure is followed, that is, making sure that the level of the levers is correct first, then adjusting each key for lift and each damper for lift, the painful experiences of regulating the dampers will be diminished. That is not to say of course that there won't be problems with some pianos.

Pianos which have split lifter trays are among the worst offenders. The procedure here is much the same. Remember to keep the sostenuto tabs level. This may require shimming between the two lifter trays to get all of the levers level.

Step #45 Adjust damper stop rail

Relatively speaking, this step is quite easy to perform. With the action installed, depress sample sharp keys and check to see how much play the dampers have when raised above the level to which they are raised by the keys. Properly adjusted, the damper stop rail should give just a slight amount of play. This is for safety reasons when the keys are played more forcefully, compacting the front rail punching more, thereby lifting the dampers slightly further.

It is also to let the sostenuto system work properly on some pianos, Steinways being the most common example. Engaging the tabs with the sostenuto knife causes the dampers to raise slightly more than the key or sustain pedal does. Adjusting the damper stop rail is quite simple.

The sustain pedal stop has already been regulated so that the pedal lifts the dampers the same amount as the keys do. Remove the action and depress the sustain pedal fully. Loosen the screws for adjusting the damper stop rail. Reposition the stop rail with just a slight amount of play in the upward movement of the damper levers. Tighten the adjusting screws and reinstall the action.

Failure to regulate the damper stop rail properly will definitely create problems, so don't overlook it. If the rail is too low, the pianist will complain of a rubbery feeling in the keys. The stop rail will act like a spring and try to keep the key from going all of the way down. Obviously, given time under this condition the stop rail felt will become depressed, and possibly the rail itself will become damaged. If the stop rail is too far up, the damper levers will bounce off of the rail and return to the lifter felts on the back of the keys with a very annoying thunk, which can easily be felt by the pianist through the keys.

Sound Background

Jack Greenfield, RTT
Chicago Chapter

ORIGIN OF EUROPEAN EQUAL TEMPERAMENT

Equal Temperament in Ancient China

The earliest evidence of use of equal temperament in European music includes documents, musical compositions and pictorial representations of fretted musical instruments originated during the sixteenth century movement away from medieval Pythagorean intonation. There appears to have been no transmission of knowledge from China where equal temperament had already been studied for several thousand years. According to legends in writings by Chinese scholars from 400 B.C. on, a scale dividing the octave into twelve tones from a series of bamboo tubes was established at the start of the 27th century B.C. The tube lengths were cut to give a cycle of fifths and fourths, all pure except for the final interval. This cycle became known as the Pythagorean tuning circle later and the difference in the final interval became the Pythagorean comma.

While the melodies were simple tunes formed on a pentatonic scale, in the culture of ancient China each of the tones was used in transposition of the melodies into all twelve keys for ritual purposes. Early Chinese theorists studied the possibility of obtaining more uniform intonation in the different keys by selecting more uniformly spaced notes from extended tuning cycles as far as the 360th note in the fifth century. The more practical method of tuning with reduced fifths (or raised fourths) was first presented about 400 A.D. by Ho Ch'eng Tien. In his calculations, Tien altered the pure interval ratios by a simple factor and obtained results with errors of 3¢ or less in eight of the tones (*Piano Technicians Journal*, September 1981, p. 25). In 1595, Prince Tsai-yo obtained theoretical figures for bamboo tube or string lengths accurate to nine places.

Why The Ancient Greeks Did Not Use Equal Temperament

In ancient Greece, the principles of tuning and scale formation did not lead into development of twelve-tone equal temperament. The Greek eight-note octave was formed by combining two four-note tetrachords. The basic difference in tetrachord tuning was in the spacing of the two inner notes to give various groupings of simple mathematical ratios. Ptolemy's diatonic hemiolon or "even" diatonic scale is the closest of any of the Greek scales to eight-tone equal division.

The octave is composed of the two tetrachords E to A and B to E consisting of an even progression of superparticular ratios easy to form on the monochord. However, the practical value of this scale is doubtful. According to Jorgensen, it is one of the most difficult of the Greek scales to tune aurally.

In the Greek system, notes were identified by their position in the octave or their relative pitch. The concept of absolute pitch identification and transposition found in the music of China did not occur in Greek music.

Origin of European Equal Temperament

It is believed equal temperament originated independently in Europe in the tuning of lutes, viols, and other fretted instruments around the start of the sixteenth century. Then, the four string lute introduced by Arabs in the thirteenth century had been enlarged to a six-string instrument tuned in fourths except for a middle third as shown in the pattern:
G_2 C_3 F_3 A_3 D_4 G_4.
Barbour gives the following evidence:

A. **Pictorial**
Paintings from 1500 and later by some Flemish artists known to be meticulous in details show lutes with frets spaced so as to give equal temperament if the

PTOLEMY'S DIATONIC HEMIOLON
(Spacing ratios and cents value shown by Barbour)

E		F		G		A		B		C		D		E
	12/11		11/10		10/9		9/8		12/11		11/10		10/9	
	151		165		182		204		151		165		182	

measurements on the paintings are accurately proportionate to the spacing on the actual instruments.

B. **Musical Compositions**
Sixteenth century compositions for fretted instruments were not written in notes but in "tablature" form, a system of symbols to represent the position of the player's fingers, similar to the present diagrams for the guitar or ukelele in popular music. From analysis of much of the sixteenth century lute music and considering the wide range of modulation and frequency of chromatic notes, it is believed this music would have sounded harsh in unequal intonation but would be most pleasing in equal temperament, although temperaments with mean semitones and either mean, just, or Pythagorean diatonic notes could have been acceptable also. However, it does appear that other types of meantone may have been used for early simpler lute music.

C. **Documentary**
The earliest reference to the tuning of lutes in equal temperament is found in the 1555 writings of Vicentino. Soon afterward, most theorists agreed that equal temperament had become standard for fretted instruments. In the 1580's, Vincenzo Galilei presented an analysis and explanation demonstrating conclusively that the most suitable and correct intonation for fretted instruments was equal temperament.

Equal Temperament in Keyboard Instruments

There are few indications of keyboard tuning in equal temperament during the sixteenth century. While there are some musical compositions with passages which would benefit from the enharmonic capabilities of equal temperament, much of the more familiar sixteenth century music written in a limited compass with few accidentals appears to have been composed for meantone intonation. Giovanni Mario Lanfranco's tuning rules for organs and clavichords published in 1533 are not precise enough for definite interpretation as equal temperament. Lanfranco's directions for slightly flattened fifths and very sharp major thirds could have produced a positive meantone temperament depending on how much the fifths were flattened. Lefranco was not clear in naming the intonation he intended.

In his 1555 reference to the equal temperament tuning of fretted instruments, Vicentino pointed out the serious dissonance problems that occurred in ensemble music with keyboard instruments which were generally tuned in meantone temperament. The fretted six-string viol, tuned in equal temperament like a lute but played with a bow, had become quite important in ensembles. Violins, however, unfretted, replacing viols in the seventeenth century orchestra, had enough flexibility of intonation to blend with any instruments in other intonation.

Theoretical Studies of Equal Temperament

By the final decades of the sixteenth century, scholars began to give more attention to theoretical studies of equal temperament, primarily in tuning of fretted instruments. Salinas' 1577 definition, the first statement with a precise meaning of equal temperament, was given in a procedure for "makers of

Continued on page 25

Work Without Pain

Clair Davies, RTT
Bluegrass Chapter

After a day of raising pitch, if you're like me, you probably want to throw your tools in the nearest river instead of the trunk of your car.

With neck and shoulder aching from hours of holding one arm in the air, you drive home tired out, cheerlessly wondering what you're doing wrong. Pain seems to come with the job — neck pain, back pain, shoulder pain —

and it *stays,* lingering through the night, growing oppressively with each day's round of pull and jerk, until by week's end you're scanning the classifieds for an easier way to make a living.

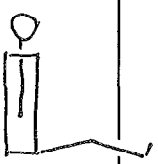
A competitor of mine did quit tuning because of this problem. His shoulder *never* stopped hurting. Month after month, it never went away. He began to hate his work. He stopped answering the phone. One Friday afternoon he took his wife, his Navy Reserve pension, a camper full of furniture and, handing his shop key to an apprentice, departed Lexington for good.

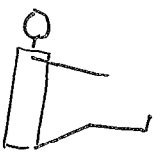
On a farm in Fleming county, the camper — built especially for moving pianos — is now a chicken house, and George is long removed from tuning. Yet now, six years later, his shoulder *still* hurts!

A while back I started feeling pain in the shoulder too. Tuning has always given me aches in the little pit at the base of the skull, but the shoulder pain was new, and worrisome. Things like that make you think about the future. I'm only forty-six, too darn young to retire to a chicken farm; I want to keep on tuning, hopefully for as long as I can sit up unassisted.

So I figured out a way to get rid of these neck, back and shoulder aches. I use a combination of three old-fashioned remedies: *gentle movement, hot water and rest.*

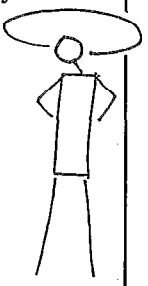
The muscles behind the shoulder become shortened and inflexible after years of tuning. With constant contraction the shoulder gets muscle-bound and loses mobility. Try this test: reach across your chest, over the opposite shoulder and touch your backbone. Do first one arm and then the other. If you've tuned a lot, you will not be able to comfortably make the reach with your tuning arm. Very likely it will hurt like the dickens to try.





You need to put the stretch back into those muscles, working with them carefully, over a period of time. Practice reaching across your chest with the affected arm often during the day. I sometimes keep my arm in that position while driving between house calls, and the relief I get is remarkable. Deal with your neck in like manner, stretching it slowly and gently this way and that, consciously relaxing all that you can. Heat helps, but not dry heat, not heating pads; always use *wet* heat. I think your body resists dry heat somehow.

These same remedies can be used for the back pain you get from too much leaning, lifting and bending in the shop. To relieve the common "vertebra-out-of-place," the extreme contraction of a muscle in the back, gently bend over — only a little at first, then more — while standing in a hot shower. Put your



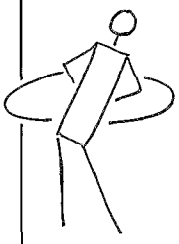
mind on relaxing, and keep the spray directed on the sore place. (Baths won't do. Bath water gets colder and colder; a shower can be made hotter and hotter.) Three or more times a day for 3 days will usually bring you right back to normal.

Don't get discouraged when the first hot-shower treatment seems to have no lasting effect; the effect accumulates. Between treatments go on with light activity. There's nothing less effective than *too much* rest; it takes twice as long to get better.

In regard to preventing back trouble, watch out for unexpected hazards. I used to keep a springy air-cooled cushion in the car to sit on in hot weather (Curse those vinyl seats!). The hard top edge of the cushion always left a mark I could feel, at the level of my shoulder blades. After a long journey into the country one warm June day, a funny time for a "cold" muscle, I nimbly reached into a grand to pull the action and pulled my not-so-nimble back instead. The cushion had restricted circulation of the blood, and no doubt did mischief to other tissues in that area, leaving my poor back defenseless.

I felt a muscle alongside my spine draw up like a fist, and suddenly there I was, with a dusty old action on my lap, unable to move anything willingly but my eyes. If you have had this happen, you know the acute agony and the

appalling sense of entrapment that I felt. It was many minutes before I could maneuver myself into a chair, where I remained even longer trying to figure a way to get back *out* of the chair, through the door, down a flight of stairs, into the car and home. I escaped



eventually, but I was terribly embarrassed and wasn't able to work for a week. I couldn't lie down, stand up, raise my arms or hang by my knees — though I tried it. That was when I thought of the shower trick and was finally able to get the thing under control. When it was over, I made up my mind I would never go through that again!

Right away, I started a set of gentle exercises to regain the strength and flexibility of the muscular girdle formed by my stomach, sides and back. To do responsibly everything I'm called on to do, I ought to be able to bend and lift without strain, and get down under a piano without paying for it all the rest of the week.

It amazes me to review those days, to remember how decrepit I had become and how strong I subsequently became. The gentle exercising was so successful I went on to build a double garage and a new workshop all by myself! It was like finding the fountain of youth! Before, I always had a backache, and each year I got more and more out of shape; in the backyard when I dropped the ball while playing catch with the kids, *they* had to pick it up. Shameful! So despite a natural aversion to exercising, I did it anyway.

The exercises I recommend are shown in the drawings: hip, head and arm circles, touch-toes, knee-bends, sit-ups and leg-ups. Try them. You will get a rewarding sense of accomplishment from them; you will feel stronger and younger; you will sleep better; you will *work* better — without pain and without strain. There is also the pleasant added benefit of warm feet in the winter because of better circulation.

If you're in bad shape like I was, start very slowly, be conservative; do only a few of each exercise the first night. Over-eagerness only causes injury.

Be especially careful with the head circles: nobody ever does them slowly enough. Do each circle on a slow count of ten, even slower if you can, *letting the muscles adjust comfortably* to the stretching. Benefit can not be gotten by doing vigorous head circles; to the contrary, more damage is very likely to result, and you will finish with a stiffer neck than you started with.

Everybody quits exercising after a while, so plan for it. Set a goal of a specified number of each maneuver, to be attained in ten weeks. *Then* quit, if you must. Later, you can start up again. This freedom from compulsion makes conditioning possible. Going through a modest program once or twice a year is much better than doing nothing at all.

You don't have to aim at being a second Charles Atlas; your object shouldn't be to go at it like a teen-aged body builder. But consider whether you can be steady at your job and continue doing respectable work as the years go by without compensating *somehow* for the wear and tear of your present routine. Your aches and pains are signals; pay attention and do something about them. It will make a big difference in your durability.

I don't deny that we both will go inevitably over the hill and down the other side; but why let it be a reckless race to the bottom?

"Watch for Your Registration Form for the Piano Technicians Guild Convention and Technical Institute to be held July 4-8, 1983 at the New Orleans Hilton Hotel, New Orleans, Louisiana"

1. Lower Registration Rates This Year
Discount Rate if you stay at the New Orleans Hilton Hotel

2. No Registration Fee for Children Under 16 Years of Age

3. Chapter Contest Offered with Three Great Prizes Going to the Top Three Winners.

4. Flat Room Rate at the New Orleans Hilton Hotel. An Exceptional Value . . .

5. Mississippi River Steamer Cruise

6. Super 2 Plantation and Lunch Tour

TUNE IN TO NEW ORLEANS . . . "Tout de Suite"

Enjoy the Guild Camaraderie and plan to stay at the New Orleans Hilton

Sound Background Continued from page 19

viols." This was a theoretical method not applicable in practical music, for determining monochord divisions for twelve equal semitones by means of the *mesolabium,* a geometrical mechanical drawing aid which had been used in ancient Greece and Rome. In 1588, Zarlino offered three more theoretical methods, also geometrical, for the same purpose. Neither Salinas nor Zarlino gave any actual figures for monochord division.

Credit for the first calculations of figures for equal temperament is given to Simon Stevin or Stevinus (1548-1620), the most influential Dutch mathematician of the sixteenth century. In addition to his prestige as an authority on mathematics, physics and military engineering, he was well-known to the general populace of his time for the invention of a twenty-eight passenger carriage propelled by sails that ran on the seashore faster than galloping horses along the side.

Although his books published on subjects in the fields of mathematics gained much contemporary importance, the manuscript with his study on equal temperament written between 1596-1600 remained in obscurity until it was rediscovered and finally published in 1884. Stevin first established the twelve semitone divisions as a series of multiples of the twelfth root of 2. Then using relatively simple mean proportional computations in a series of steps, he obtained monochord lengths breaking down the octave into intervals of six semitones, three semitones, and finally one semitone enabling him to complete the octave by proportion. His maximum error was 0.4¢, compared to nine-place accuracy obtained by Prince Tsai-yu of China about the same time or within several years earlier.

While most of his contemporaries rejected equal temperament except for fretted instruments, Stevin contended it was the most logical system for all instruments including keyboards. He maintained that the simple rational fractions assigned to just intervals were approximations no more "true" than the irrational figures for equal temperament, a view in agreement with some of the present principles of acoustics.

Vincenzo Galilei and Equal Temperament

While Stevin's study was a significant advance in theory of equal temperament, the work of Vincenzo Galilei was more influential in paving the way for equal temperament in practical music. Galilei, an expert performing musician and singer as well as teacher, composer and theorist, in a 1581 treatise explained a practical method for fret placement which was widely adopted. He recommended spacing successive frets on the neck of the instruments at distances in the ratio 18:17 and said that the twelfth fret, the octave, would be in the middle of the string. Galilei gave no mathematical demonstration of how he determined the ratio, evidently reached by intuition. The ratio 18:17 is equivalent to 99¢, giving an error of 1¢ per fret. It was customary in tuning to make final fine adjustments aurally comparing the same note produced on different strings.

Galilei was one of the most vigorous proponents of equal temperament in the late sixteenth century. In addition, as father of the great scientist, Galileo Galilei, his biographical background is of special interest. References vary, giving his birth from 1520 to 1532. He established a reputation as a lutenist when a young man. Around 1562, he settled in Pisa, married a member of a local noble family and began the study of theory with Zarlino nearby in Venice. Galileo, born in 1564, was the first of six or seven children. About ten years later, the family moved to Florence.

Galilei continued his own investigations and experiments in music theory and studied the work of Vicentino and other controversial scholars. As he proceeded, he began to find flaws in the principles he learned from Zarlino. Their disagreements gradually led the pupil and teacher into becoming bitter adversaries. In 1581, Galilei wrote *Dialogo della musica antica e della modern* in which he attacked the prevailing music theory expounded by Zarlino which still retained some ancient Greek doctrines of mystical effects of numbers. Among these were the beliefs that the numbers 1 to 6, referred to in numerology as the *senarius,* were "sonorous" when present in ratios of musical intervals, and only superparticular ratios were theoretically correct. Galilei opposed the limiting of acceptable musical intervals on the basis of numerical ratios. He observed that musical practice did not conform to ancient doctrines and speculative number theories and that, theoretically, there was an infinity of consonances. He pointed out the differences between the church modes and other discrepancies in contemporary theory of scales and advocated adoption of equal temperament to allow unrestricted modulation.

Zarlino appears to have used his influence to prevent the publication and sale of Galilei's book in Venice and defended his system in his *Sopplementi musicali* published in 1588. Galilei gave a spirited reply in his *Discorso,* a shorter essay published in 1589. In this work, he reported his experiments with strings and stated what was probably the first mathematical law derived by systematic experimentation — these gave pitch relationships of string length and tension and music pipe length and volume. His experimental data contradicted Zarlino's "sonorous" numbers theories. Thus, while the pure fifth is produced by string lengths in the ratio 3:2, it is also the interval resulting from strings of equal length under the tension of weights in the ratio 4:9.

Galilei was a prolific composer showing considerable knowledge of harmony, counterpoint and tonality in his writings as well as musical compositions. He composed in all twenty-four major and minor keys. His studies in acoustics became the foundation for work continued after his death in 1591 by his son, leading to Galileo's discoveries in the physics of string vibration and sound.

The Tuner Continued from page 15

While you are doing all these mechanical motions and listening for beat rate ratios, also listen for what is happening in the partial structures of the notes you are tuning. Take time to depress the octave E3—E4 without the hammer striking the strings and strike in staccato fashion note E5. Listen to the partial of each of the two strings sing out. If the octave is in tune you will hear no beats or rolling effect. What you are listening to is the 4th partial of the bottom note and the 2nd partial of the top note.

Now hold down the same octave and strike E5 and B5. You will now hear the 4—2 coincidentals plus the 6th partial of E3 and the 3rd partial of E4, called the 6—3 coincidental partials. Both of these tests should have no beats or rolling effect. This exercise is really easy. Don't let the amount of words distract your thinking or your attention.

When you start tuning note C3 you may be able to use another set of coincidental partials to control the amount of stretch in the bass tuning. They are the 12—6 coincidental partials. The location where you can utilize these coincidentals will vary from one piano to another.

The 12—6 coincidentals of course are the 12th partial of the bottom note of the octave and the 6th partial of the top note. You can hear this by depressing the keys to lift the dampers off the strings and strike in staccato fashion note G5 when checking octave C2—C3. This will produce a beat rate. Use this beat rate as a control by slowly reducing the rate as you progress down the keyboard. Eventually you will hear all of these partials without the aid of striking the notes that have the coincidental frequencies.

If you want to have a little more fun, try this. Hold down octave C2—C3 and strike note E5. Most likely you will hear another beat rate. It, too, can be used to control the tuning of the bass octaves.

The use of partials is directly affected by the amount of life or lack of it in the wound strings. Another factor that affects the ability to hear beats is when the soundboard is separated from the ribs. Beat rates sort of fly away when this condition exists.

Using coincidental partials is my favorite way to have fun tuning the bass. However, there are many other ways, a couple of which I think you should know about.

On some grands (sorry I can't mention names) and on one vertical that I am aware of, you can tune the bass octaves by using the minor 6th and Major 3rd test. This means that the beat rate of the minor 6th above the bottom note will beat the same as the beat rate of the Major 3rd below the top note. As an example: the beat rate of C2—G#2 and G#2—C3 should be the same. This is only possible on some grands and one vertical as I mentioned above. Starting at the first note below the temperament, check and see if you can use this method. If you can you will save a lot of time.

Another is the use of the minor 7th. When beat rates of the intervals you have been using become slow and laborious, listen for the beat rate of the minor 7th, *i.e.*, C2—A#2. The rate should become slower at an even rate as you progress down the keyboard.

Now that we have broached the theory of tuning let us set up a little routine for tuning the octaves below the temperament.

Starting with the first note below your temperament octave, play the octave by striking the notes gently, not hard. If you strike too hard you will set up a contradiction in the partials between the transverse and longitudinal movement of the string.

While playing the octave proceed to get it in the ball park, then use the outside Major 6th, inside Major 3rds test to zero in on tuning the note accurately. Use all the other tests and checks mentioned above. Proceed down the keyboard in the same routine. Bear in mind the use of the outside 6th and inside 3rds will not be useful to the bottom note. As it diminishes in usefulness choose one of the methods mentioned earlier.

Some may be asking what this method accomplishes. In my experience it smooths the transition across the tenor-bass break, it keeps more consistency in the interval beat rate changes and it reduces the amount of compromising below the temperament. It also helps you hear the required changes moving across the trichord, bichord and unichord unisons.

For the musician, if you haven't already discovered it, I have used the sharp (#) symbol throughout, which in some instances will disagree with the fundamentals of music theory. Interval C—A# according to the fundamentals is an augmented 6th, C—B^b is a minor 7th. However, for consistency I still lean toward using the # symbol only as not all piano tuners are musicians and for some, including my students, it is better to leave out the fundamentals of music theory.

In conclusion, remember that tuning below the temperament is building the foundation for above the temperament. To use an old cliche, the stronger the foundation the stronger the house. Happy tuning.

It's The Little Things That Count!

Gerald F. Foye, RTT
San Diego Chapter

I can't remember my customer's name — how do I expect my customer to remember my address? Carving your address in keytop number 88 with an ice pick will do nicely. However, some customers have no sense of humor at all.

Generally your phone number is all they need. But, there are times when they need your address to mail you your fee, as happens with my customers on occasion. A neat way around this is the self-addressed, stamped envelope (S.A.S.E.). Which simply means you carry around with you a few envelopes with your name and address on them provided with the correct postage. At those rare times when a customer charges the invoice and wants to mail the money, I hand them the invoice, a business card with the date the piano was tuned and my envelope. A hand-written address will do, unless your writing is like mine (I could qualify as a medical doctor on that basis alone); in that case, a rubber stamp serves nicely. That rubber stamp will prove to be useful for many other purposes as well. You could stamp out your own business cards if you are operating on a limited scale. It's also convenient for ordering parts, letterheads and many other good things.

Coming Events

UPCOMING CONVENTIONS OF THE PIANO TECHNICIANS GUILD

1983 July 4-8
New Orleans
New Orleans Hilton & Tower

OTHER CONVENTIONS OF INTEREST

1983

March 20-25
Music Teachers National Association
Hyatt Regency
Houston, Texas

LOCAL CONVENTIONS AND SEMINARS

March 18-20, 1983
PENNSYLVANIA STATE CONVENTION
Allentown Hilton Conference Center
Contact: Mrs. Sharla Kistler
RD No. 8, Box 461
Allentown, PA 18104
(215) 395-2348

March 20-22, 1983
POST CONVENTION OF PENNSYLVANIA STATE CONVENTION
Cove Haven Pocono Resort
Lakeville, PA
Contact: Richard E. Bittinger
106 West Main Street
P.O. Box #51
Brownstown, PA 17508
(717) 859-3111

March 25-28, 1983
CENTRAL WEST REGIONAL SEMINAR
University of Wisconsin at River Falls
Contact: Mark Fischer
Central West Regional Seminar
P.O. Box 72
Northfield, MN 55057

April 7,8,9, 1983
PACIFIC NORTHWEST CONFERENCE
Vance Tyee Motor Inn
Olympia, WA
Contact: Michael D. Reiter
902 - 185th Court East
Spanaway, WA 98387
(206) 847-6009

April 9, 1983
STEINWAY ONE DAY MINI SEMINAR
Steinway Hall
New York City
Contact: Nancy Hazzard
6 Joan Place
Staten Island, NY 10314

April 10, 1983
ALL-DAY SEMINAR
Hilton Inn South
Denver, CO
Contact: John Bloch
1584 S. Broadway
Denver, CO 80210
(313) 722-4221
757-0004

April 22-23, 1983
MIDWEST CONFERENCE
Marriott Inn
Ann Arbor, MI
Contact: Mike McGuire
4151 McAlpine
Milford, MI 48042
(313) 363-8488

April 29-30, 1983
NEW ENGLAND REGIONAL SEMINAR
Ramada Inn
Mystic, CT
Contact: Scott Welton
P.O. Box 404
Bethel, CT 06801
(203) 743-7342

May 12-14, 1983
PIANO TUNERS ASSOCIATION CONVENTION
Claredon Hotel
Leamington Spa, England
Contact: Ralph Long
8 Baldock Street
Ware, Hertfordshire
ENGLAND, SG12 9DZ

INDUSTRY NEWS

Soundless Instrument Synthesizes Real Music

A new musical instrument developed in Australia has no sound of its own, and doesn't use strings, reeds, horns or drumheads to produce sounds. Nor does it use electronic oscillators and filters like conventional synthesizers.

Manufactured by Fairlight Instruments Pty. Ltd., the Fairlight Computer Musical Instrument (CMI) makes use of any sound that is fed into it.

A sample of just one note of a piano is sufficient to enable a musician to produce a Chopin concerto from its keyboard. A single note from a violin, and the same musician, seated at the same keyboard, can produce a Paganini violin concerto.

With samplings of a couple of guitars, a bass, and a drum kit, the musician can have a Rock 'n' Roll band on the keyboard. It can be played live or may be programmed to play itself.

The CMI is equipped with a light-pen which can be used to draw a sound wave on the video display screen, and this sound can then be played on the keyboard.

The pitch of any note played on the keyboard is normally calculated in terms of the twelve-note scale, but virtually any scale may be specified and the keyboard tuning changed accordingly in a few seconds.

The Fairlight generates sounds digitally, not by the analogue techniques used with conventional synthesizers. Essentially the CMI functions by taking a sample of sound from its microphone or from a tape recorder, digitizing it, then loading it into the waveform memory of a voice module. Thus any sound whatever can be played and manipulated, pitched to the keyboards.

Any sound — a bird call, running water, or the slam of a car door — can be used as the basis of synthesized sound which the musician can manipulate via the touch-sensitive keyboard.

Performance controls allow a musician to "design" an instrument without any previous knowledge of computers or programming. There are a velocity-sensitive, six-octave master keyboard, three faders, up to three variable-output foot pedals, three switched pedals and two pushbutton switches. When a sound is loaded, these controls are automatically configured to control vibrato, timbre, attack decay, sustain and portamento.

"The possibility of new sounds with the CMI totally changes the way of thinking for writing music," stated French composer Olivier Bloch-Laine. "Musicians can make truly any sound wanted."

Further information can be obtained by contacting Fairlight Instruments USA, 1610 Butler Ave., Los Angeles, CA 90025.

Steinway & Sons Expands Marketing Program to Include the Gulbransen Musicomputer Line

NEW YORK — Steinway & Sons has assumed marketing responsibility for the Gulbransen Musicomputer line, according to Lloyd W. Meyer, president of Steinway.

Mr. Meyer emphasized that this addition involved solely marketing activities and that production of the Steinway and Gulbransen products will continue in separate locations — Steinway in Long Island City, N.Y. and Gulbransen in Hoopeston, Ill.

As part of the addition, Mr. Meyer pointed out, "We have reorganized and enlarged under Steinway & Sons the Steinway piano and Gulbransen Musicomputer marketing staffs into a cohesive and effective team of specialists to serve even more effectively the needs of Steinway and Gulbransen dealers."

Under the expanded marketing program, Robert Dove, who joined Steinway & Sons in June as vice-president of marketing and sales, will be responsible as well for all marketing aspects of Gulbransen Musicomputers.

David W. Rubin has been appointed senior vice-president of Steinway & Sons and will be responsible for all public relations activities, advertising and institutional sales programs, as well as the Steinway concert and artist program. Formerly a Steinway vice-president, he will also play a major role in product quality and product development.

Other appointments include the following:

Thomas Zateslo, formerly director of marketing for Gulbransen, will join Steinway & Sons as director of marketing, having responsibility for both lines.

Nelson Wheeler, formerly national sales manager for Gulbransen, will assume sales responsibility for both product lines. Reporting to Mr. Wheeler will be a reorganized and expanded field force of district managers who will call on both Steinway and Gulbransen dealers in their respective territories.

Additional personnel in the marketing department include Dolly D'Elia, who will join Milie Passando as a sales coordinator for both Steinway pianos and Gulbransen Musicomputers. Miss D'Elia had been executive secretary to the president of Steinway & Sons.

Jack Malmsten, who was export sales director for Gulbransen, has been appointed to the new post of director of international marketing for both Steinway and Gulbransen.

Kenneth Elford, Gulbransen representative in Canada, will represent Steinway in that marketplace as well.

Horace Comstock, who has been handling a number of areas for Steinway, most notably advertising and promotion, will now specialize entirely in sales training.

Product specialists for Gulbransen Musicomputers will continue to function as in the past, reporting to Tom Zateslo. In addition, the Gulbransen service team, headed by Ronald Howie, will continue operations from its Illinois base, concentrating only on Gulbransen musicomputers.

Mr. Meyer said plans are nearing completion for a new service department for Steinway pianos and that details will be made known in the near future.

He added that John Steinway, chairman of Steinway & Sons, continues to maintain an active role as chairman beyond his planned retirement, which had been scheduled last summer. Mr. Steinway will continue to assist in major Steinway piano events sponsored by dealers, said Mr. Meyer.

In a letter to dealers announcing the new marketing organization, Mr. Meyer said, "The intent is to provide better service to you. This will mean a level of personal contact never before experienced by our dealers. We are certain this will result in increased business for you, and ultimately, improved profitability."

1983 Institute Classes

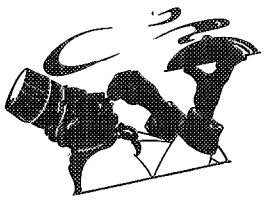
REPEAT	INSTRUCTOR
Auro-Electronic Tuning Techniques	*Bowen*
Shop Business and Operation	*D. Snyder, W. Snyder*
Installation of Upright Hammers, Shanks, and Butts	*Brandom (Everett)*
Grand Dampers	*Edwards, Caskey*
	Dennis, Utsonomija, Nishio (Yamaha)
Steinway Servicing	*Heuther*
Historical Survey of American Piano Industry	*Johnson, Reuter, Weisensteiner (Kimball)*
Grand Regulation	*Juhn*
Vertical Piano Trouble-Shooting	*Neblett*
From the Bottom Up	*Robinson*
Progressive Grand Regulation	W. Snyder, D. Snyder
Grand Hammer Installation	*Heischober*
Advanced Player Repairs	*Heischober*
Advanced Player Forum	*Selected Technicians*
Private Tuning Tutoring	

NEW CLASSES	INSTRUCTOR
Basic Tuning Class	*Stegeman*
Electronic Tuning	*Sanderson*
Basic Vertical Regulation	*Wurlitzer Team*
Hammer Construction and Voicing	*Krefting*
Vertical Dampers	*Krefting - Sims (Baldwin)*
Voicing	*Hunt - Jameson*
Wood Joints	*Geers*
Home Computers in Your Business	*S. Nicholson*
Pinblocks	*R. Kingsbury - S. Kingsbury*
Woven Felt Manufacturing Use and Problems	*P. VanStratum*
Keyboard Building	*W. Brooks*
Comparison of Aural and Electronic Tuning	*J. Coleman - G. Defebaugh*
Rescaling Problems	*S. Fairchild*
Pinblock Plugging	*B. Russell*
Audiologists and How we Hear	Dr. C. Berlin
Business Class	
Tools	*J. Harvey (Kawai)*

Ireland Tour Conducted By Merle Mason

Merle Mason is planning a tour of Ireland in May for all interested members of the Piano Technicians Guild. This tour will be fifteen days long and is being handled by the Hollywood World Travel Bureau. The total cost for airfares, hotels, meals, buses and guide is $1,866.00 from Los Angeles, $1641.00 from New York and intermediate points will be proportional.

The trip can be expanded to Great Britain or the continent at the individual's expense and the return ticket will be honored at a later date. For information contact: Merle Mason, 1512 E. 5th, Space 38, Ontario, CA 91764. (714) 968-6587



1983 Institute

So — you say to yourself — why not go? Well, first let me tell you what will be there and then we will talk about "why go?"

This year's institute will offer more than thirty classes on all phases of piano service. These classes will be taught by more than fifty of the best instructors in the country, people who are experts at what they do and who are eager to pass that knowledge on to you. Some of these people are factory personnel. They bring you the "why" and the "how" from the factory point of view. Others are field technicians with a wealth of experience and knowledge about solving problems out in the field. Some are experts of a very special sort. They have knowledge and information that will broaden your viewpoint, or help you solve special problems.

What kinds of classes do we have? We have tuning classes, both aural and electronic, beginning and advanced. There will be classes in regulation and repair for grands and verticals, player classes, business classes, rebuilding classes and classes about tools! There will be special classes on wood joints, audiology, and a class explaining how woven felt cloth is manufactured. Do you want to know about how to use a computer in your piano business? We offer a class to teach you about this new technology.

All of these classes and the national convention of the Piano Technicians Guild will be housed in a great new hotel — the Hilton — in the exciting city of New Orleans.

"That's dandy," you say, "but why should I go?"

You should attend because to do so would be a form of continuing education for you. You need it! You need the stimulation of new ideas, new technology, and new information to take the "ho-hum" out of your career, or to move you along to better things, if you are just beginning. You can make new friends. Not all the brains are teaching in classrooms. You would be surprised to see how many fine technicians are in the halls and exhibits picking each other's brains. You could be part of that exchange process.

Speaking of friends, the great faculty of this year's institute is composed of people who are my friends, all of them with special knowledge. They can be your friends too, but you have to come to New Orleans and meet them in order to get the benefit of their knowledge and friendship.

Have you ever dreamed of attending the World Series or the Super Bowl? Thousands of people spend great sums of money each year to attend these sport spectaculars and be entertained. If their team wins, they wave at the T.V. cameras and, with index fingers held aloft, they chant, "We're Number One!!"

The Piano Technicians Guild Institute is the Super Bowl and World Series of piano service. If you attend, you can see the best and learn from them. You can carry something home with you that is useful. If you practice what you have learned, you can really *be* "Number One!"

In the coming issues of the *Journal* I will tell you more of the specifics of the 1983 Institute. In the meantime, start your planning. A great hotel in a great city combined with a Piano Technicians Guild convention and institute adds up to a marvelous opportunity to combine a great vacation with a fabulous learning experience.

Ben McKlveen
1983 Institute Director

1983 Piano Technicians Guild Convention, New Orleans, Louisiana, Part III

One of the many tourist attractions in New Orleans which is always exciting is a trip on the Mighty Mississippi aboard the legendary paddle wheel steamers. New Orleans has three of these which are a proud tradition of the Mississippi River. One of these, the steamer Riverboat President, is a tradition in New Orleans and has been providing daytime and evening tours and dancing since 1933. It is docked at the foot of Canal Street just across from the Hilton Hotel.

In addition to a banquet this year we have decided to have a "fais-do-do" aboard the President with a Cajun style buffet supper (not dinner in Cajun country) of red beans & rice, southern fried chicken, and gumbo. There will be on board a Cajun band playing traditional French Acadian music for your dancing or listening pleasure; all this while we enjoy a cool beautiful cruise of the river. The President won't be crowded because we have it all to ourselves, and the capacity of the President is around 1600 passengers. How can you miss this? Come and see how Cajuns enjoy a good evening.

In case you mispronounced something above: Fais-do-do (pronounced Fa dough dough) meaning, go to sleep. In days gone by when Mama and Daddy went to the dance there were no such things as babysitters. All of the family went to the dance, including the babies. The youngsters had fun while the parents went dancing and the babies were put to sleep in the dance halls on tables, chairs, and sometimes on the floor. Thus the term came about, and is still in use today in this part of the country when Cajuns gather for a good time at fairs, parties, or community activities.

The President has four decks; three are enclosed and the top deck is open-air. The cruise will offer many beautiful views from the river; the sight of the 1984 World's Fair, the French Quarter, Jackson Square and the St. Louis Cathedral, ships from many countries of the world and many more too numerous to mention here. You have to see it to believe it. The cruise will begin around 7 PM so there will still be plenty of daylight to see all. You can't miss this. Just think — all of this in a relaxed informal atmosphere. You don't have to wear a three piece suit! Just come any way you are comfortable and have a good evening with us. No one can possibly want to miss the trip on the President! See you in July in New Orleans, the city care forgot!

Nolan P. Zeringue
Local Host Chairman

About Our Institute Director

Don L. Santy
Executive Editor

The very first Piano Technicians Guild member I shook hands with — aside from those who interviewed me — was Ben McKlveen in Cincinnati after a chapter meeting.

I had slipped in unnoticed during their program, since I was staying just down the street at the Netherland Hilton in preparation for the 1978 convention. When the lights went up Ben came back and introduced himself.

It was the beginning of a delightful relationship. We spent the rest of the evening in convivial conversation at a local bistro. We have been conviving periodically ever since.

An interesting article on Ben's background appeared in the Cincinnati chapter's excellent little newsletter; it will help bring you up to date on this most interesting and truly outstanding craftsman.

The article reads as follows:

Ben McKlveen, the Master Story Teller, can describe a happening using dialects and colorful language and make the point like no one else can. He knows the questions and he knows the answers. All is accomplished in a gentle, intelligent fashion. Just to be able to sit in on one of his classes is worth the price of admission.

My first interest was as to how Ben got started in piano tuning. While Ben was in the Service playing jazz-bass, his Warrant Officer asked him if he wanted to go to England for six months to study piano tuning. One person from the group was to be selected. Ben thought it was the most ridiculous occupation and that only old men did such things. So his friend George went to England. George returned and told Ben about the exciting time he had going to the opera, plays, and what a fascinating time he had at school.

But Ben wanted to be a performer. He came back to the States to study oboe. His oboe teacher pointed out that performers can run into lean times, and that he always put money in his pocket when he tuned pianos. He suggested that Ben do the same. The second look seemed pretty good. Ben weighed all his interests. He had a background in engineering, music, and teaching. Piano tuning looked good. His oboe teacher, noticing an excitement in Ben, said, "Be careful or you will be tuning for a living and playing oboe for a hobby." Ben said, "No way." Ben was playing oboe with the Symphony, English horn with the opera, and doing shows with the Schubert Theatre.

Ben got a degree in Music Education from the University of Cincinnati. His piano tuning teacher at the Conservatory recommended Ben to take his place. Ben taught tuning at the Conservatory for four years. His reputation as a fine teacher was established and he began to have private students. He got into convention teaching by accident. He was at a conference in Chicago. One of the instructors got called away in an emergency. Ben filled in for him, winging it all the way. It turned out to be a terrific class.

Cliff Geers was the most influential person in Ben's life. "Cliff Geers is the kindest, most non-judgmental person I have ever worked with. His influence on me was profound." What a statement!

Ben joined A.S.P.T. in 1953. It was the parent organization of the P.T.G. The Cincinnati Chapter fell apart in the early '60's. Ben, wth the help of Willard Sims, Ellen Sewell, and Cliff Gears, reorganized the Chapter in 1971.

Ben still plays oboe. He also enjoys swimming and skiing. He loves to travel, which adds to the joy of teaching at conventions. He has three children and two grandchildren. His family and friends call him "Ham."

His closing comment: "I don't feel that I know everything about the piano. I go to seminars for a trade-off of ideas. The Guild is a source of inspiration and creation. The piano business is continually unfolding."

by
Marnie Squire

About New Orleans and the New Orleans Hilton Hotel

A steamin' bowl of gumbo, a big helpin' of smokin' jazz, and a taste of Mardi Gras every day of the year! That's New Orleans.

And there's nothing like the New Orleans Hilton. It's as much a part of New Orleans as Jackson Square. Rising on the banks of the Mighty Mississippi, the Hilton overlooks churning paddlewheels of "Days Gone By" gliding along the river to the Historic French Quarter with its Spanish-tiled roofs and gaslit patios. Not far away rests the magnificent Superdome edged in by skyscrapers and surrounded by the romantic mansions of the Garden District.

New Orleans is the most exciting city in the South. And the New Orleans Hilton is right in the center of it all!

New Orleans and the New Orleans Hilton. The only way to go . . .

Bonus

Day or night, rain or shine — when you're ready to take a break, relax in the total athletic environment of the Tennis and Health Club. Eight indoor and three outdoor tennis courts, eight racquetball courts, saunas, whirlpools and exercise rooms complete with universal health equipment. For joggers, a beautiful riverview, outdoor jogging track.

Enjoy the Guild Camaraderie and plan to stay at the New Orleans Hilton

1982-1983 MEMBERSHIP/BOOSTER CLUB

Booster Club	Pts.	Mbrs.
ALLEN, Jon	1	1
ATHERTON, Olan M.	1	1
BANTA, Norman	5	1
BEATON, Richard	4	1
BECK, Jacqueline	3	3
BERRONG, Jack	2	2
BITTINGER, Richard	6	2
BLANTON, Tom R.	1	1
BOURDON, Donald W.	1	1
BOYNTON, Richard B.	1	1
BRIDGES, Nate	1	1
BRILEY, James E.	3	1
BROOKS, Walter	5	1
BROWN, Glenn	1	1
BRYANT, Ken	1	1
BUYCE, Harold R.	2	2
CALLAHAN, James	4	1
CASWELL, Alan R.	5	1
COATES, Timothy C.	5	1
CRABB, Larry	15	5
DAVIES, Clair	4	1
DENNIS, Robert R.	4	1
EATON, Wendell E.	3	1
FLEGLE, Richard A., Sr.	3	3
FREIDIN, Irving	5	1
GARRETT, Joseph A.	1	1
GEIGER, James B.	1	1
GRIFFIN, Rudolph	5	1
GRIFFITH, M. Laverne	1	1
GROSSMAN, Matthew	1	1
GUSTAFSON, David	1	1
HAINES, F.L.	1	1
HAINES, Roy	3	1
HALE, David	1	1
HALE, Robert	10	2
HARMON, Clayton	1	1
HAWKINS, Marshall B.	5	1
HESS, James N.	4	1
HESS, Marty A.	1	1
HITT, Henry L.	1	1
HOSTETLER, Robert	1	1
HOUSTON, James	4	1
HOWENSTINE, Richard	1	1
JORDAN, Wayne	1	1
KEYES, Otto R.	4	1
KINSER, Bill	4	1
KLINE, Albert	5	1
LAGOY, Martha M.	4	1
LEARY, Janet	1	1
LITTLE, Mary Davis	1	1
LOEFFLER, W.J.	4	1
LOVE, David	4	1
LUY, George	1	1
MACKINNON, R. Taylor	1	1
MARTIN, Edward E.	1	1
MASTAGNI, Angelo	3	1
MAYR, Vitus J.	9	2
MEISSNER, Walter	1	1
MILLS, Fred	1	1
MIZELL, Wade	1	1
MOBERG, Jonathan	4	1
MONROE, Paul	1	1
MOORE, Robert	1	1
MURRAY, Samuel	1	1
NICHOLSON, Dennis	1	1
NICHOLSON, Steve	1	1
ORR, Ronald	2	2
PENNINGTON, David L.	1	1
PERKINS, Robert K.	1	1
PERRY, Mark J.	1	1
PHILLIPS, Webb	5	1
PREUITT, Ernest	4	1
ROSENFELD, Jim	1	1
QUINT, Richard B.	1	1
SANDERS, Charles	1	1
SANKEY, Lee M.	5	1
SCIORTINO, Joseph	8	2
SILVA, E. Michael	4	1
SMITH, Sheldon P.	3	1
SNYDER, Willis	5	1
STONE, Sidney O.	7	3
THOMAS, Dean	2	2
THOMAS, H. Vince	4	2
THOMPSON, Treacey	1	1
TRUAX, Richard	4	1
TUBLITZ, Evan	1	1
UPHAM, Russell	1	1
VERHNJAK, Karl	6	2
WALKER, Elizabeth K.	1	1
WALSHE, Robert C.	5	1
WELTON, T. Scott	4	1
WEST, Ivan	4	1
WHALEY, Denzil	1	1
WIGHT, Blais	1	1
WILEY, John	5	5
WOLF, Bob	8	2
WONDRA, Lola	4	1
WOOD, Edwin	2	2

Restorer's Club
CASWELL, Alan R.
COATES, Timothy C.
GRIFFIN, Rudolph
HALE, Robert
HAWKINS, Marshall B.
SANKEY, Lee M.

1982-1983 Reclassifications

Registered Technician

Fresno Chapter
WOOD, Jeffrey A.

Sacramento Valley Chapter
BOMBAL, Antonio C.

Western Maryland Chapter
OLSON, Eric D.

Apprentice

Pittsburgh Chapter
BARR, David J.

Allied Tradesman

Pittsburgh Chapter
STERN, Bernard F.

New Members

Registered Technician

Connecticut Chapter
THERIAULT, Marshall H.
88 North Chapel St.
Torrington, CT 06790

Indiana Chapter
BOYLL, Larry D.
1642 W. Lexington Ave.
Elkhart, IN 46514

San Antonio Chapter
FRUTH, Roman M.
5143 Grovehill
San Antonio, TX 78228

HOLDER, Elvin R.
3627 SW Military Dr. LT 2
San Antonio, TX 78211

Seattle Chapter
SNIDER, David A.
1421 15th #308
Seattle, WA 98122

South Texas Chapter
EBELTOFT, Keith Ellis
364 Shangrila
Corpus Christi, TX 78412

Apprentice

Montana Chapter
BRIANT, Peter C.
Box 1330-12 6th St. South
Great Falls, MT 59403

New York City Chapter
JOHNSON, Daniel C.
321 W. 94th #4 NW
New York, NY 10025

Pittsburgh Chapter
SERVINSKY, Thomas C.
17 North 5th
Indiana, PA 15701

WIDDERSHEIM, Charles R.
915 East Pearl St.
Butler, PA 16001

San Francisco East Bay Chapter
NELSON, Ralph E.
16846 Meekland Ave.
San Lorenzo, CA 94580

South Central Pennsylvania Chapter
BOWMAN, Keith A.
201 Hamilton St.
Harrisburg, PA 17102

Apprentice

Waukegan Chapter
DORNFIELD, Bruce G.
2134 Walters Ave.
Northbrook, IL 60062

SEAMAN, Richard
632 Caroline Court
Deerfield, IL 60015

VOSS, Kathleen H.
3333 Standish Lane
Racine, WI 53405

Associate

Toronto Chapter
GRAY, Robert H.
2223 Fassel Ave.
Burlington, ONT L7R 3N9

Student

Baton Rouge Chapter
WHITMIRE, Sam D.
801 Gordon
Layfayette, LA 70506

Central Washington Chapter
DEBAR, Bing A.
Rt. 1, Box 314
Manson, WA 98831

Memphis Chapter
WALKER, Dudley E.
300 Craft Street
Holly Springs, MS 38635

Philadelphia Chapter
BROWN, Norman T.
727 Panmure Road
Haverford, PA 19041

SHANKER, Marsha F.
7400 Blevd. F304
Philadelphia, PA 19152

Research Triangle Chapter
KARL, Tom H.
2251 Rumson Road
Raleigh, NC 27610

Rogue Valley Chapter
LOWELL, Tom A.
2360 Galls Creek Road
Gold Hill, OR 97525

HANSEN, Robert W.
3240 Griffin Cr. Rd.
Medford, OR 97501

San Francisco East Bay Chapter
KEENEY, Carol J.
4683 Emily Court
Castro Valley, CA 94546

Santa Clara Valley Chapter
JOHNSON, Michael L.
20974 Sunshine Lane
Los Gatos, CA 95030

Wichita Chapter
CRANE, Alan B.
3013 Schrader
Wichita, KS 67211

Youngstown Chapter
MORGAN, Daniel T.
833 Indiana Ave.
McDonald, OH 44437

PEEBLES, Bruce L.
315 Stratford Road
Fairlawn, OH 44313

Affiliate

Member At Large
FONG, Chang Ay
201 Jalan Imbi
Kuala Lumbar, Malaysia

TURNER, Adrian C.
86 Redborne St.
W. Chermside Brisbane
Queensland, Australia 4032

CHAPTER CONTEST — BE A WINNER!!

Promote Attendance at the 1983 Convention New Orleans, LA July 4 — 8, 1983

You will want to enter this contest not only to create interest, excitement and ATTENDANCE at your 1983 convention but to win one of the exciting prizes named below.

RULES

FIRST PRIZE — FILM "Music of Sound"

Awarded to the Chapter with the largest percentage of PAID member registrations to the convention.

SECOND PRIZE — SET OF TECHNICAL INSTITUTE TAPES

Awarded to the Chapter with the second largest percentage of PAID member registrations to the convention.

THIRD PRIZE — FOUR COPIES OF *THE CLASSIFIED INDEX*

Awarded to the Chapter with the third largest percentage of PAID member registrations to the convention.

The winning chapters will have special recognition at the convention.

GET ON YOUR MARK
GET SET
GO!!!!!!

WIN

Auxiliary Exchange

PRESIDENT'S MESSAGE

Dear Friends and Members of the Auxiliary,

Perhaps you have already received your convention brochure for the national convention in July. If not, you will probably be receiving it soon. I hope you will take a few minutes to peruse it and try to picture yourself there. I have just come to know New Orleans since I started planning activities for our convention there, but already I realize it is a very special city which makes an excellent setting for our group.

One highlight of the week will be our trip on Wednesday, July 6th. Our bus will pick us up at the hotel in the morning. We will drive through some of the beautiful Louisiana Cajun country to the largest plantation home in the South. . . Nottoway Plantation. This magnificently restored American Castle has 64 rooms with over 53,000 square feet of total area under its original slate roof. The plantation has over 200 windows and breathtaking views of century-old live oaks and the mighty Mississippi River. But we won't stop at just one plantation; we have made plans to take you to Houmas House plantation, too. Houmas House is one of the South's most authentically restored homes complete with antebellum dressed guides. The tour will also take us to lunch at Jean Lafitte's. The two plantations, the lunch, and the transportation to our door will just cost us $30 apiece. And the memories will linger long after the money has been spent.

We feel this tour will offer our friends and members a chance to step into the grandeur and magnificence of the Old South. It will provide a delightful day of entertainment and a chance to enjoy and savor a fascinating area of the United States in the company of friends.

The plantation tour is but one of the nice things waiting for you in New Orleans at the National Convention. If you sit down with the convention brochure you will discover some of the other things we have planned for you. We on the National Auxiliary Board and in the New Orleans chapter of the Auxiliary have been arranging things in preparation for your arrival. Now is the time for you to plan so you can turn the trip into a reality for yourself. It will be such a delight to share the experience with you.

Julie Berry

Communicating Through Terminology
by Ginny Russell

In recent issues of the Auxiliary Exchange we have read about our participation in business and in seminar and convention activities. This month let's concentrate on participation in shop work. I don't mean hands-on communication, although many of us do shop work, but just verbal communication. You know. . .the sort of thing that makes for better marriages, closer relationships, etc. If you are aware of piano terminology you will better understand your technician when arriving home at the end of the day the first words he utters are, "Boy, am I tired! I had a hard day! I replaced five elbows for Mrs. Jones, tightened Mrs. Smith's screws, regulated Mrs. Forte's action, and replaced 20 bridle straps for the Preuitts. Of course, I also pulled 920 strings!" To someone unknowing the response would be, "So what?" But to the knowledgeable spouse that is a lot of work for one day.

The other day our daughter returned from work and said, "It took me all day to do this bank wreck!" I just sat there! I didn't know whether to smile or frown. Of course her voice didn't reveal the word "rec" as in record. It really wasn't an accident but an accounting term I was unfamiliar with. So communicating through terminology is a key word in life.

Did your technician ever request assistance to "pull the plate?" Did you get excited wondering if "we" were going to clean the cupboards, only to find that "we" were going to take the plate out of a piano! Such terms as drill the block, scrape the board, graphite the bridge, and level the keys are all a part of the piano technician's vocabulary. Oh. . .I almost forgot, traveling hammer shanks doesn't mean you are going on a trip!

The more we know about our professional terms, no matter what profession, the better we will communicate. So use your spare time wisely: read piano related material, attend seminars and conventions, and learn all you can. Your business will benefit in return. Using correct terms is most impressive to all customers. So learn to communicate through terminology; you'll love it!

With Sympathy and Fond Remembrances

As many of you already know, Eleanor Metz of the Cleveland Chapter died last December. Eleanor was always a faithful and contributing member of both her local Auxiliary chapter and the national organization. It was Eleanor who made the lovely afghan which was

raffled at the closing luncheon in Washington. Reflecting on my acquaintance with Eleanor has made me realize there are many people around this country and Canada who have brightened my corner of the world with their gifts of friendship. Although we do not see each other often, we do spend quality time in each other's companionship. I carry in my mind countless memories of conversations, funny stories, and reflective moments I have shared with these special people I meet in the Auxiliary. Right now I am glad I shared some happy times and special occasions with Eleanor Metz, because she won't be around to share them any more. And yet she lives in the memory of Auxiliary members across the country. Our thoughts are with Eleanor's husband Al and their children as they work through these first months without her.

Are You Using a Computer?

It is obvious that we are racing into the computer age even though many of us are not exactly sure which direction to run. Are you using a computer in your piano service business? If so, what kinds of things do you do with the computer? What kind of equipment did you buy, and would you buy the same kind again? How long did it take you to get your business set up on the computer? We would be happy to share ideas about computers and piano service businesses with the readers of this column. We would like to have some input and personal reactions from people who are currently using computers in their businesses. Since most of our businesses are relatively similar this shared information could be very valuable and easily applied.

Thank You

Just a note of thanks for the prompt response of dues payments. It makes the job easier when everyone is "on time," so if you have not paid your dues, now is the time to get it done. Thanks again,

Ginny

Agenda Items

The Auxiliary Board will be preparing an agenda of items for consideration at both the Board meeting and the Auxiliary Council meeting to be held in New Orleans. Perhaps there is something you have thought of which concerns the operation or future plans of the Piano Technicians Guild Auxiliary. It would be nice if you would jot your ideas down and send them to the Auxiliary President so they can be entered on the agenda. We won't be able to take any action on even the best idea unless it is presented to us.

That's all for this month. Keep thinking about New Orleans and the good times we will share there. In the meantime we hope the pianos in your area keep going out of tune and the people keep deciding to do something about it.

PROJECT TIME.....PROJECT TIME.....PROJECT TIME

Are you prepared for the Auxiliary Project? Excitement is growing concerning the latest Auxiliary Project which will be available in New Orleans at the National Convention in July 1983. The unveiling will be magnificent! Imagine the crowds waiting to purchase this unique gift for every technician or musician. An item that will be "at home" everywhere in the world, *a sun catcher!* As the sun shines through every window this lovely design will catch the rays and add cheer and happiness to the lives of millions of people. Sun catchers attach to any window with a suction cup (or may be hung with thread); they move with the breeze, shine with the sun, and are happy. This particular sun catcher was designed with you in mind. Wait until you see it. So. . .come prepared to buy some to take home for gifts for holidays, birthdays, anniversaries, and hostess gifts. Remember. . .

PROJECT TIME.....PROJECT TIME.....PROJECT TIME

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CLASSIFIED ADVERTISING RATES are 25 cents per word with a $7.50 minimum. Full payment must accompany insertion request. Closing date for ads is six weeks prior to the month of publication.

Box numbers and zip codes count as one word. Telephone numbers count as two words. Names of cities and states count as one word each.

Send check or money order (U.S. funds), made payable to the Piano Technicians Guild, to Classified Ads, THE JOURNAL, 1515 Dexter Avenue North, Seattle, WA 98109.

The Journal does NOT provide blind box service. Please include a mailing address and/or telephone number with your ad.

Ads appearing in this journal are not necessarily an official endorsement of the services or products listed.

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PIANOS FOR SALE — Always on hand, 150 to 300 uprights! Plain case, art case and players. Also 50 to 150 grands at all times, as is or rebuilt. Excellent brand names — no junk! All set up for inspection. Lowest possible prices. Call for quotes: **Owen Piano Wholesalers, 2152 W. Washington Blvd., Los Angeles, CA 90018. Telephone (213) 883-9643.**

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NEW SOUNDBOARDS MADE FOR YOU. Ship old board. New board comes to you ready for installation. Send for instruction on: **Victor Video Tape, $94.75. Victor A. Benvenuto, 6825 Germantown Avenue, Philadelphia, PA 19119. (215) 438-7038.**

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ACCURATE ELECTRONIC TUNING!! 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.**

COMPLETE HOME STUDY COURSE in Piano Tuning, Regulating and Repairing. Write or call for free brochure. **Aubrey Willis School of Piano Tuning, P.O. Drawer 15190, Orlando, FL 32858. Phone: (305) 299-3690.**

PEDAL LYRE for square grand with heavy cabridle legs. **1101 East Riverside Drive, Austin, Texas 78704. Call collect (512) 444-4826 after 6 p.m.**

KEY RECOVERING MACHINES for sale. Prices on request. Send self-addressed envelope. Or build your own — send $15.00 for plans, photos, instructions (refund w/purchase of machine). **Solenberger Piano Service, 1551 Lynn Court, Santa Rosa, CA 95405.**

PIANO TUNING COURSE — June 27 - August 12, 1983. Summer School, Chautauqua, NY 14722. Concentrated 7-week, hands-on experience — Tuning, regulating and repairing pianos. For information contact: **Arthur Briggs, Director, 1013 Fairmount Ave., W.E., Jamestown, NY 14701, (716) 489-3496.**

FOR SALE: MODIFIED SIGHT-O-TUNERS. Available immediately. All machines certified for CTE use with temperature stabilization and precision components insuring 1/10th of a cent accuracy. Lowest prices on complete modifications including oscillator and filter outputs, magnetic pickup and auxiliary inputs, instructions to The Octave Division Temperament system, year guarantee. Call for quotes on trade-ins, new and used SOT, modified and unmodified, or send your unit in for repairs or modifications. **DAVID PITSCH, RTT (801) 225-0156.**

GRAND WIPPEN REBUILDING — Steinway, etc. Greatly enhances feel of action. Increase your profitability. From $250.00. Guaranteed prices, shipping time, satisfaction. Details/instructions write: **West Coast Piano Action Co., POB 61454 Sunnyvale, CA 94088.**

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WANTED

WANTED MASON & HAMLIN OR STEINWAY GRAND. Want one that was player. Have player mechanism to install. Also want player mechanism or parts of these units. **Brady, 4609 Cranbrook, Indianapolis, IN 46250 (317) 259-4305. After 5 p.m. (317) 849-1469.**

SIGHT-O-TUNER WANTED, prefer working, will consider repairable. **John Cook, 11 Lionel Hts. Cres., Don Mills, Ontario, Canada, M3A 1L8.**

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MISCELLANEOUS

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CONSUMER GUIDE TO PIANOS. I am conducting an extensive survey of new pianos: their quality, service problems, business practices, etc. The results will be published next by a major publisher. If you regularly service or sell new or near-new pianos, work in a piano factory, or otherwise have information, expertise, or opinions which you would be willing to share, please send your name, address, and phone number and I will contact you. All sources will be kept confidential. **Larry Fine, Piano Technician, P.O. Box 465, Jamaica Plain, MA 02130.**

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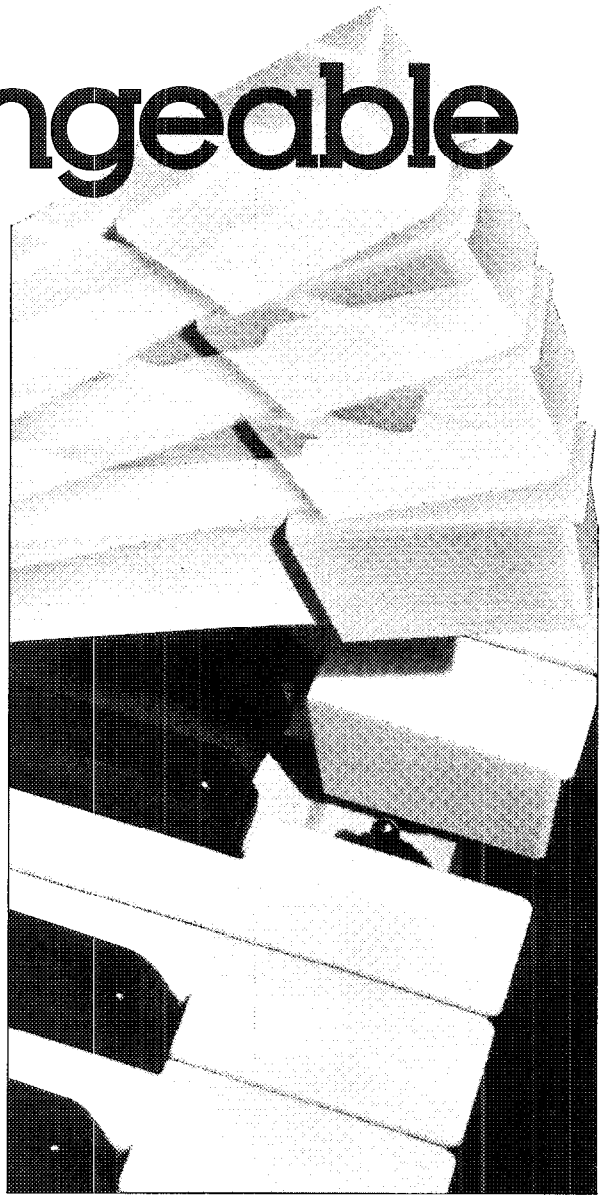

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