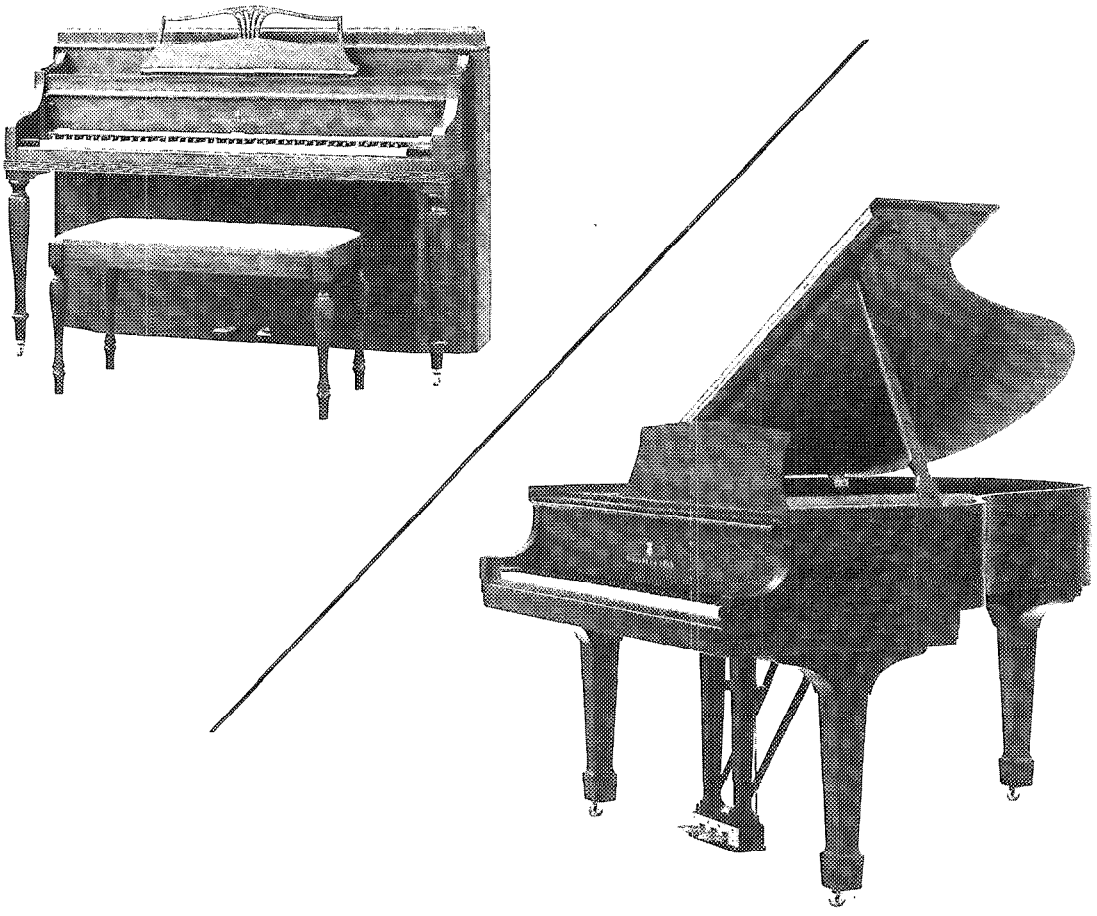
Piano Technicians Journal

February 1983



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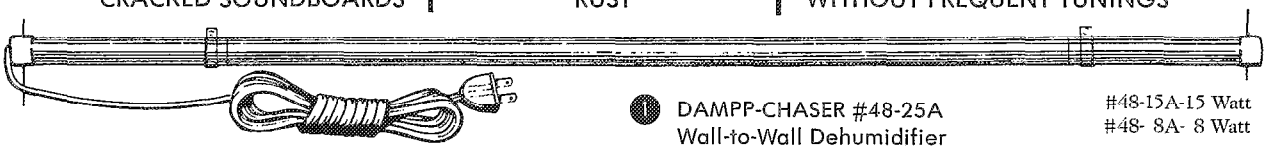

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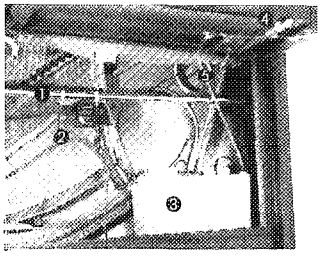

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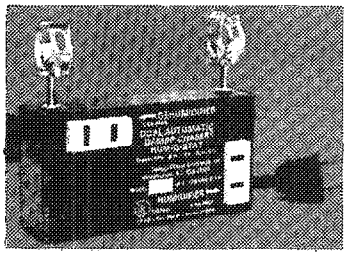

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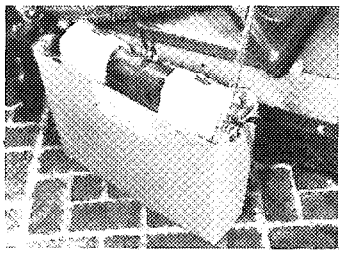

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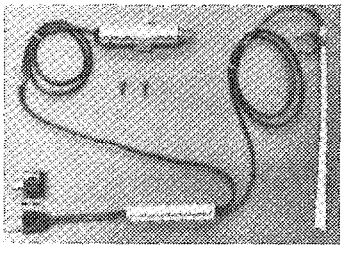

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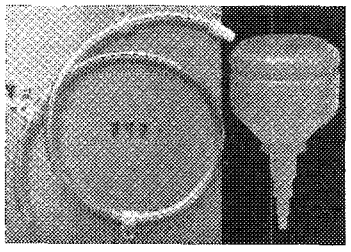

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Piano Technicians Journal
Official Publication of the Piano Technicians Guild

February 1983
Volume 26, Number 2

CONTENTS

Cover: Stephen Brady, a concert piano technician at the University of Washington, tunes a Bosendorfer Imperial. The piano is a 9 ft., 6 in. concert grand with eight full octaves.

PIANO TECHNICIANS JOURNAL, the official publication of the Piano Technicians Guild, is published monthly and issued to members. Annual subscription price: $85 per year; $155 for two years; $7.50 per single copy. Editorial Offices: 1515 Dexter Avenue North, Seattle, WA 98109. Telephone (206) 283-7440 or 282-1991. **Closing date for copy and advertising is six weeks prior to date of publication.** Advertising rates are furnished on request.

Reprints of most articles are available from the Guild home office, 1515 Dexter Avenue North, Seattle, WA 98109. Price per page (plus postage): $1.25 for the first page of each **Journal** article researched, $1.00 for additional pages of the same article.
Second class postage paid at Seattle.
US ISSn 0031 9562 Foreign and Domestic.

THE PIANO TECHNICIANS GUILD, INC.
1515 Dexter Avenue North
Seattle, Washington 98109

Telephone: (206) 283-7440
282-1991

Office Hours: (Pacific Time)
Monday — Friday
9:00 a.m. — 5:00 p.m.

Editorial

Don L. Santy
Executive Editor

A group of villagers in a remote mountain town got together and decided that they needed a train to reach neighboring centers of population.

Everyone thought it was a good idea and agreed to pitch in and raise the money and put forth the personal effort necessary to get the job done.

After months of joint effort and combined labor, the railroad ceased to be a long-cherished dream and became a reality. It was considered a milestone in private enterprise and a brilliant example of achievement with "people working together" for a common cause.

The train provided good service to its passengers. It was clean and well-run. Some passengers even volunteered to assist others by passing out pillows, soft drinks and magazines. It ran on time and everybody was happy and satisfied. Most important of all, every passenger paid his/her fair price for the tickets and the train was financially successful.

One day a passenger decided that he didn't like one small detail about the train. "It stops at stations I don't want to visit," he explained. "Why should I pay for getting there?" So he decided not to pay for his tickets.

He still rode the train, however. He drank his soft drinks, rested on the pillows and read the magazines and eventually always arrived at his destination. He apparently didn't notice that the rest of the passengers had to pay a little more for their tickets so the train could still run.

Soon another passenger decided that she was tired of passing out soft drinks, pillows and magazines. She wanted to continue to enjoy these little luxuries, however. Other volunteers had to work a little harder in carrying out these tasks to replace her efforts.

It soon caught on and other passengers got the idea that they too could refuse to buy tickets, pass out soft drinks and pillows, and provide magazines. They all had good excuses, acceptable and logical. "I had too many personal problems," "I didn't like the trip last week," "The road bed is too bumpy," "Someone was rude to me," "I don't like the place I have to sit in," etc. Soon there was no more money to pay the engineer or buy the fuel. Nobody was available to pass out soft drinks, pillows and magazines. After a while the train stopped running — and everybody wondered why.

It is sad to see an organization die. I have seen many in the last throes of death and have happily had a hand in helping nurse some of them back to health.

Newly formed organizations all start out like a wedding: full of faith, hope and great expectations. The excitement, the zeal to make it work, the anticipation and enthusiasm are all there. Nothing could happen without this chemistry.

The metamorphosis of decay begins when members start taking things for granted. The verbal symptoms are all there. "Don't worry, things will work themselves out." "I've done my part now, let somebody else worry about it." "I just don't have the time, why should I worry about it, it isn't my problem." "I'd be glad to give you my advice, but don't ask me to do anything." Statements like these are heard in most organizations. The more prominent they become, the worse off the organization finds itself.

"What is everybody's responsibility is no one's." A phrase I often use to force people to get down to specifics. Line authority, targeted goals, clear objectives, crisp communications, specific assignments to the willing and able are the meat and muscle of organizations. Devoted members, willing workers, skilled leadership and strong boards form the skeletal framework.

"Confusion results in direct proportion to the number of people involved." The larger the number of people in any organization milling around, muttering and mumbling in confusion, griping about this and that and accomplishing little in the process, the weaker the organization can become. The more people, the more complex the communication system. The less defined the goals and objectives, the more wasted time and effort one finds.

"Idealism is a wonderful thing — but it seldom contributes to progress." Organizations are practical entities. They can't exist without generous portions of money, time and effort or any combination of these three. Organizations exist through the proper application of practical services. Many organizations "starve themselves to death" simply out of their inability to generate money which, of course, results in services.

Death of an organization is seldom a sudden thing. It's a creeping paralysis. A cancerous growth. Well on its way by the time it's discovered. Whether it's that ominous disease called apathy or "restrictivitus" brought about by shortsighted members, the bottom line is always the same: lost members, skinny treasuries, lack of activity, loss of purpose, too many fingers in the pot or lack of direction and leadership, internal dissension are all there.

Organizations need not die. When enough people are willing and able to go in the same direction at the same time almost anything can happen. The united power of people can be an awesome thing. This power can be used for good or evil. It can also be wasted and misdirected.

I remember years ago when I applied to the State for some aid to a school for retarded children. I sat in a nondescript government office waiting room for the better part of a day. I was finally ushered into a minor official's cubicle. He was fairly inundated in stacks and

stacks of paper. Huge bound volumes of computer printouts and notebooks full of communications everywhere. I wondered to myself how he could possibly keep track of all this stuff and accomplish anything.

After a long and detailed explanation of what had happened to the twenty-three million dollars in funds which had been allocated by the Feds for Aid to Retarded Children, I left his office in a maze of confusion.

I sorted it all out while driving home from the State Capitol. By cutting through the "bureaucratese" I finally determined what had happened to the money. It had been allocated, all right, but after all it had to be properly managed and dispersed where it would do the most good for the most people, right? Well, this meant setting up a national distribution center with the proper number of executives and staff assistants. This newly formed "center" in turn had to create additional entities to ensure the proper utilization of these funds equally throughout the length and breadth of this great land. Right? How else than through *regional* organizations, all properly established and staffed. Each region was challenged with the somber responsibility to see that the money was distributed so it would maximize its value to the local areas. Obviously the *states* would be in the best positions to decide the disposition of these funds, right?

So state organizations were all set up and staffed with the proper number of professional social work administrators and enough back-up staff to ensure that they wouldn't have to work hard, and thus funds were sent on down for their proper and prudent disposition.

Now it's obvious that the states were too far removed from the field to get a good handle on things. Oh, they could maintain proper controls to make sure the money was used properly and request numerous reports on what was going on all right, but it was the *counties* that were on the firing line, so to speak, right?

That wasn't hard after all — there are many, many minor bureaucrats available, particularly right after an election, and they are all looking for challenging and inspirational new careers. So offices went up all over the state, divided by counties. "Now I want you to know," said the bureaucrat, "*none* of these funds were wasted, *all* could be accounted for and our network of service was the most efficient and effective I have ever seen in my twenty-five years in government.

"Oh, the money for your school? Well, I'm afraid the funds ran out before we could really get the program 'off the ground,' you see, but we have gone back and are requesting another allocation, so come back in about six months and we'll see what we can do."

Letters

Dear Mr. Santy:

As a retired music educator who spent twenty-eight years in public school education, I cannot agree with your editorial in the November, 1982 issue of the *Piano Technicians Journal*, "Education — Going Back to the Basics," or with the views of Ernest Boyer expressed therein. Boyer's views are indeed contrary to the best interests of our guild — they are narrow, near-sighted views which exclude cultural pursuits and notably music education. In a time when major cutbacks are taking place in education and music and art programs are being slashed, Boyer's views should hardly be championed in a publication such as ours which should, in my opinion, lend wholehearted support to the fine arts programs in our schools.

Mr. Boyer's statement, as quoted in your editorial, "The main reason students drop out of school is that they can't read and add," is one that misses the mark. Students don't drop out because they cannot read or add, they drop out because they are bored with it all; because they fail to find some all-consuming interest which will keep them coming to school day after day, such as the study of music — singing in an exciting chorus, playing in an accomplished band or orchestra, studying the voice, the piano, or perhaps following some other field — photography, drawing, painting, dance, theater, sports. Without this kind of stimuli, school can be a dull place indeed. It has been my observation over the years that students who drop out of school have most usually been those who have failed to develop a consuming interest in something "special," for whatever reason. Often family problems overwhelm students. Personal inadequacy — the inability to keep up with peers in the learning process can develop a negative attitude and a strong desire to "get out" as soon as possible — to be free of the overwhelming problems, the oppression of the teachers who are insisting on standards of achievement which the student feels are unobtainable.

"Going Back to the Basics" has a nice ring to it — a high-sounding phrase. But, what is basic? Boring students with "three r's" several hours a day? Remember, these are students who could be home watching a thrilling series of TV shows. And what about the fine arts — are these considered "basic" by Mr. Boyer? He doesn't say so. Perhaps he never heard a piano concerto or a great symphony?

Over the years, I have known any number of students who remained in school simply because they enjoyed being involved in the music activities there; frosting on the cake, if you will. Boyer seems to ignore this.

Educators, in their zeal to make schools more interesting to a variety of students, have often gone overboard in their programming of heterogeneous course offerings. Pendulums swing both ways. Boyer's call for "back to basics" is as far to the right as the over-proliferation of courses is to the left. There is a middle ground — one which includes the important motivating cultural pursuits of man in a judicious balance.

If one looks into recent reports of various experimental school programs where the fine arts have been made the center of the curriculum, their overwhelming success proves such narrow views as Boyer's wrong indeed.

We are faced with the problem of educating a new breed of children today, children whose parents shunt them off to pre-school nurseries at a tender age in order to earn two salaries, children who grow up with a television set as parent, whose parents are divorced or separated, who suffer maltreatment or incest, who may not be adequately nourished, who never see the inside of a church or synagogue, who have little or no sense of self-esteem and often lack a sense of purpose. We also need to educate those who have succumbed to the wiles of the drug pushers and, in some cases, the pimps.

Boyer says students drop out because they "can't read and add." — poppycock!

Yours sincerely,
William J. Moonan, RTT

President's Message

Ernie Preuitt
President

Last month this column spoke of a change in attitude. This month we would like to carry it a little further.

In these days of soaring costs, world, national and local tension, and moral decay of much of our society, it becomes increasingly difficult to maintain a positive attitude about life itself. But to be "number one," one must try harder. Those commercial advertisements that claim their company is number one usually translate to some form of "we try harder."

There is a lot of truth in this philosophy, for positive thinking is the road to success in this or any business. Your attitudes are important to your everyday life — so important they are the difference between success and failure, happiness and dissatisfaction, love and hate. Your attitude most often determines how many friends you have.

The success story of the Piano Technicians Guild didn't just happen. It was developed that way. The true spirit of this organization is the spirit of our members working as a team devoted to the business of our Guild, the eagerness to learn and the willingness to do more than one's share. These are the ingredients of this or any other successful organization.

Positive attitudes are unbeatable. Being positive in your thinking means looking at things from the sunny side, making the most of your assets, finding reasons to enjoy the world and the people in it, and above all concentrating on those things you can change and overlooking those things you cannot change. Once you have formed the habit of being positive about yourself and your life, you'll take things in stride and minor setbacks won't spoil your day.

Your attitude also affects your social life. All of us are attracted to smiling, happy, friendly people. If we can make a special effort to be friendly and helpful, if we can be cheerful when others are downhearted, if we can provide some indoor sunshine when the weather is dreary, then, to borrow a phrase, "Every day in every way we keep getting better and better."

Good attitudes and positive thinking make piano service an easy winner in the professional world. If we will adopt a success-oriented attitude we will spare ourselves a great deal of hassle and we will experience more good feelings about ourselves and others. We will serve as a magnet to attract not only the loyalty of our own membership but also those in the field who have not yet joined with us, and, of just as much importance, the piano-owning public.

Changes in attitude, positive thinking, enthusiasm, coupled with a desire to improve our skills, can lead us to happiness and success, because WE TRY HARDER.

Don't know where I saw this, but it goes something like this: "A smile creates happiness in the home; fosters good will in business; and is the countersign of friends. It cannot be bought, begged, borrowed nor stolen, for it is something that is of no earthly good to anyone until it is given away." Let's KEEP SMILING!

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In addition to analysis of potential refinements in piano design, tone tests help establish tonal standards for pianos in current production. To insure tonal consistency from piano to piano, we have a tonal standard piano at our factory for every size of grand we make. A tonal standard instrument is used until a production piano is judged in a tone test to be better, at which time that piano becomes the new tonal standard.

Seventh in a series of informative ads on piano tone published by Baldwin exclusively for the benefit of piano technicians.

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THE TECHNICAL FORUM

Jack Krefting,
Technical Editor

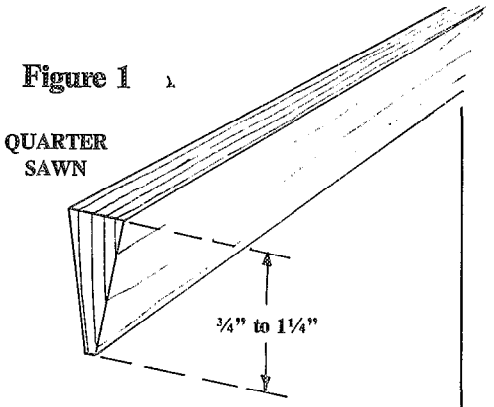
I had occasion to junk two pianos recently, but I saved the plates on the chance that one of our readers might be looking for just such a thing. One is a 45" Wurlitzer upright, and the other a baby grand Aeolian, about 4'6" in length. These are free to whoever wants them, and I will keep them around for a month or so. Interested parties may contact me directly for further information.

In this connection, it occurred to me that we ought to provide space free of charge to members who have something to give away, as opposed to goods and services or other things which would be available for a monetary consideration. (Those items belong in the Classified section, of course.) Subject to space limitations, then, and other things such as editorial discretion, I will make a small part of my column space available to those members who have usable items which they are willing to dispose of at no charge.

Vertical Rebuilding

When all loose glue joints have been refastened, the soundboard should again be dried to its practical minimum dimension in preparation for shimming. As has been discussed previously in this series, the pencil marks across the ends of the cracks, or the presence of white wood, will indicate the moisture content of the wood. Shimming material should be lying on the board during the drying process so that it will be about as dry as the board; otherwise the shims will bulge or sink when the moisture content finally equalizes, weeks or months after the job is finished.

Figure 1



In this dry state, the board should be checked for crown by stretching a thread along its back side between the longest ribs. When the presence of crown has been established by observing a gap between thread and board in the middle, preparations for shimming can continue.

Shimstock is available from supply houses in two widths, suitable for minor repairs, but for major work larger shims are necessary. The technician can make shims from seasoned, clear, straight-grained spruce; this may or may not be available from wood dealers, probably not from lumberyards. Some of the best shimstock comes from old ribs or other parts such as keybeds or braces, cut as shown in **Figure 1.** Some of the literature of our trade recommends cutting old soundboards into shims, but this is not possible unless one were to shim with flatsawn wood, the only way a tall enough shim could be cut from a soundboard. **Figure 2** shows why this will not work. . . a shim needs to be about twice as tall as the soundboard is thick, otherwise there is either no wedging action or a sunken shim.

Ideally, a good shim should be cut on a very shallow angle so that a moderate amount of downpressure will put plenty

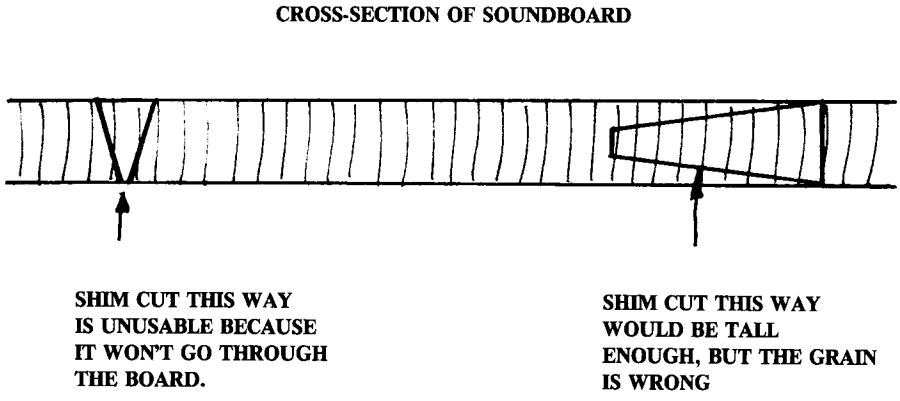


Figure 2

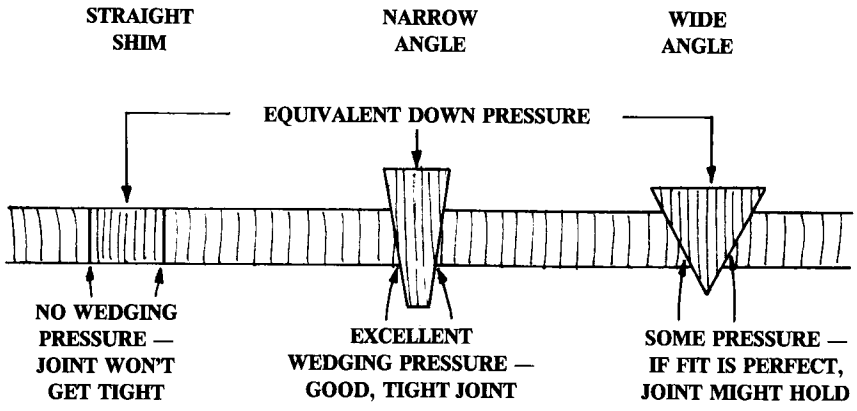


Figure 3

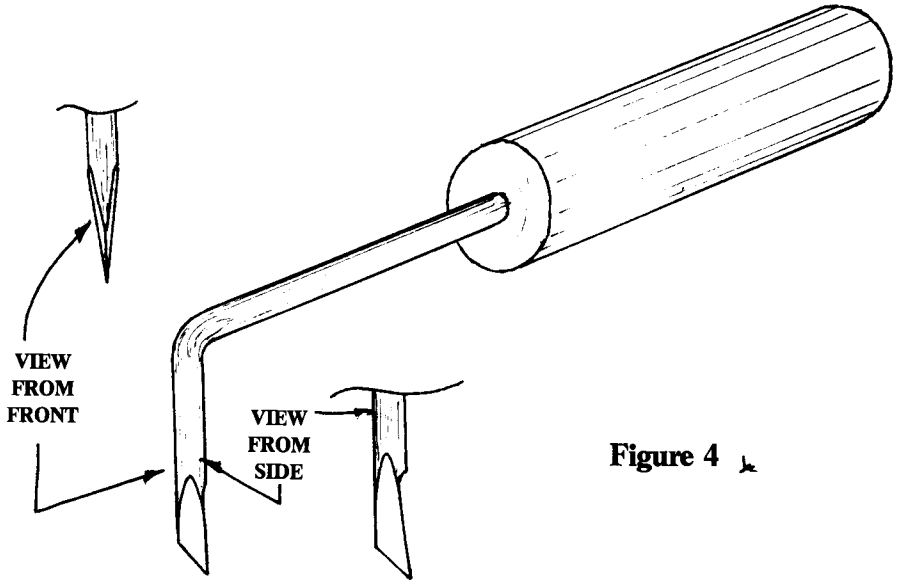


Figure 4

of pressure on the glue joint. There must be *some* taper, as a square or vertical shim can be fitted only, not wedged, but the intent of **Figure 3** is to show the advantages of the tall, sharp-angled shim. The precise angle is not as important as the capability of fitting it; whatever tooling is to be used to cut the cracks will dictate the angle of the shims. A typical shimming tool is illustrated in **Figure 4.** It works, after a fashion, but it cannot do the whole job. For one thing, being pointed, it cannot be used deeper than the thickness of the board because the point would then start cutting across the ribs. Even if the angle of the cut matches that of the shim perfectly, the back of the board will end up looking worse than before — like each crack became an open wound, complete with drips of dried glue. If this type of shimming tool is to be used, the craftsman should have several, ground as shown in **Figure 5.** Then the board can be opened up enough to fit a decent shim through it, a one-piece shim that can be trimmed and finished on both sides.

Next month in this space we will discuss shimming techniques.

The "Altered Equal Temperament"

Last October we published an article by Steve Fairchild, lately of Guinness fame for his incredible tuning speed. Steve had discovered a temperament which made many small pianos sound better, at least in the common keys of C, F and G major, and he wanted to share it with us. But alas, it would appear that not only is Steve not the first to discover

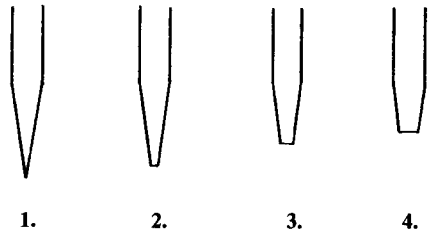


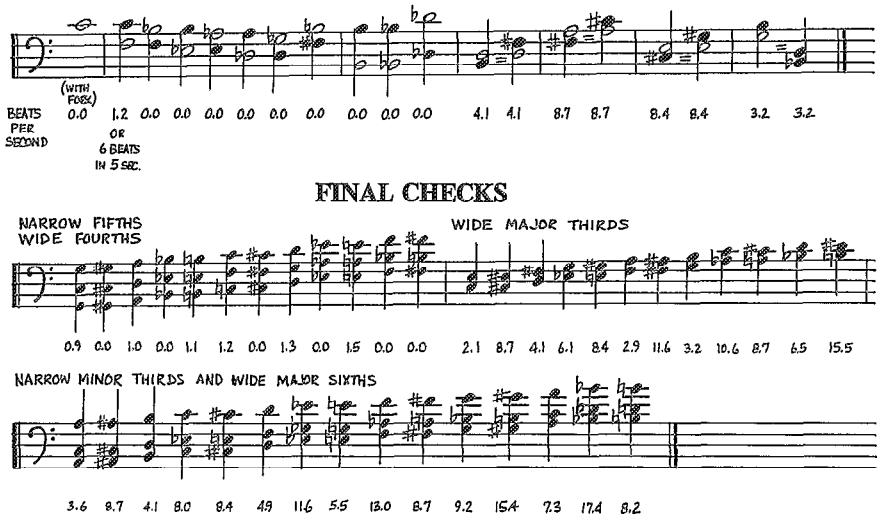
Figure 5

this temperament, he isn't even the second. Owen Jorgensen has an article in this issue on the subject, and we also have the following by Martin Tittle:

"Steve Fairchild's 'altered equal temperament' was, according to Mark Lindley's article, 'Instructions for the Clavier Diversely Tempered' in the January, 1977, *Early Music* magazine, '...praised by Tartini in 1754 for its qualities of *chiaroscuro* [and] was used at Padua by Francesantonio Vallotti, organist and resident composer from the 1720's until his death in 1780.' It is a 1/6 comma irregular circulating temperament very similar to the Thomas Young Temperament #2, which is very well known among musicians, especially harpsichordists. The Vallotti has its own following as well, so I see no reason for not publishing a tuning scheme for it if you want to. I worked one out for myself in 1976 and enclose a copy (**Figure 6**). Since I was considering it an historical temperament, I started my outline on C, as is usual among early temperaments. In each interval, the half note is the note being tuned, and the quarter note is the already-tuned reference note. Bar lines only divide the procedure at what I considered logical points. You'll notice I have this tuning schematic labeled 'for Van Biezen (Thomas Young #2 transposed).' That's because Steve was not the first to rediscover this particular tuning. A man named Van Biezen rediscovered it and called it his own in 1970 and it was published as such in Gerry Klop's *Harpsichord Tuning*, a widely distributed tuning manual for harpsichordists."

Martin is right, of course, at least in terms of theoretical beat speeds. But in fairness to Steve it should be pointed out that those theoretical ratios are not realized in the average spinet because of the high inharmonicity, so his temperament is really not exactly the same when applied to small pianos, as he intended. The other thing we should point out is that we showed Steve copies of Tittle's letter and Jorgensen's article before publication, and he encouraged us to go ahead and print them for their educational value even if it made him look a little silly. It does, a little, maybe, but then again maybe not. As an instructor, Steve's job is to teach, and we all learned something from this, right? Besides, many of our history books still assert that Columbus discovered America, when he probably wasn't even the second to do so, but there's glory enough to go around.

Figure 6 **TUNING SCHEMATIC FOR VAN BIEZEN (THOMAS YOUNG #2, TRANSPOSED)**



Repinning Uprights Butts Using New Flanges

Our next correspondent, Dave Tabachnick, has submitted the following information:

1. Make sure the new flanges are an identical match to the old. Do so by changing one or two in the piano prior to removal of action.
2. Space guide hammers to strings in piano before removing action to shop.
3. Prepare all parts and tools needed:
   - 2 sets of new flanges - it is easier to re-bush over-reamed flanges in your spare time
   - complete supply of center pins
   - cutting nippers or pliers
   - knurled center pins and pin vise (See *Journal*, Apr. 81, p. 12, Paragraph 1)
   - burnisher
   - center pin extractor
   - 2 sets of gram weights so you have sufficient amount of 1 and 2 gram sizes to gauge torque after re-pinning
   - screw holding screwdriver
   - pliers with buckskin glued to jaws (to remove pins when sizing so as not to scratch)
   - *gram resistance gauge if available. I don't have one, but it is now available through American Piano Supply
4. In workshop, remove butts one section at a time (except for guides).
5. Remove old flanges carefully. Try to avoid pushing cut side of pin through the birdseye.
6. Size new center pin in birdseye. The pin should not go in by hand pressure alone. It must fit very firmly.
7. Ream new flange with knurled center pin. Fit each side separately by feel. I make a few sizes of knurled center pins. Sometimes I use the same size as center pin in the birdseye, sometimes a half size smaller or larger. It is convenient to have these handy, set in a marked pin vise.
8. You must be sure that new flange has proper side clearance to the birdseye. If too tight, file the inside

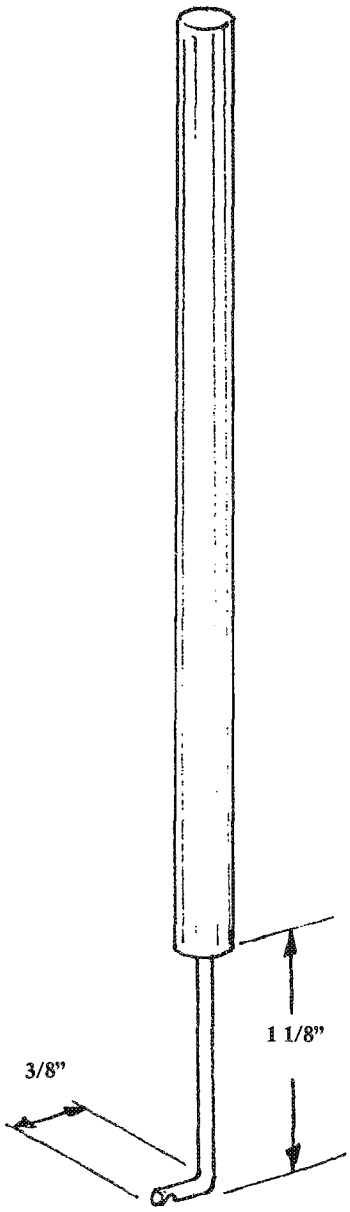


Figure 7 Jec.

of the flange arm. Re-pin flange to butt and be sure *not* to cut the pin at this time. If a gram resistance gauge is available, you can measure the torque very accurately (See Pages 8-12, *Journal*, Apr. 1981). If this is not available to you, your round gram weights can be used as washers added to your flange screws. For example:

Weigh your flange screws, which will be approximately 2 to 3 grams. By using a 2 gram washer between the screw and flange, you will have approximately 5 grams of resistance based on actual weight of screw. I used between 5 and 7 grams on a console action as it was in a damp area. You can go higher if you feel it necessary.

If the fit is too tight, the flange will not drop with the weight of the screw and washer. You must push out the center pin and ream a little more. If it is too loose, you have over-reamed. You should begin again with a new flange. You can re-bush the over-reamed flanges in your spare time. When your torque is measured and found to be correct, you cut the center pin.

9. Install re-pinned butts to the rail. Space and travel hammers.

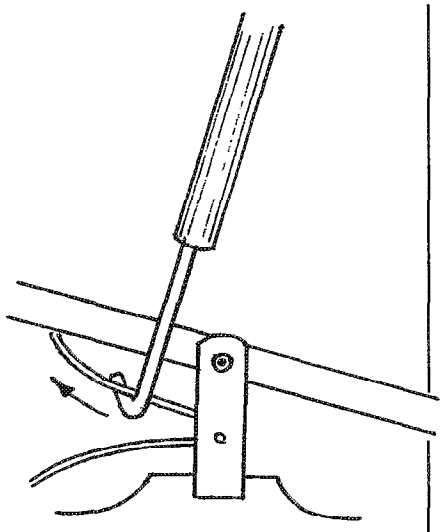


Figure 8 Jec.

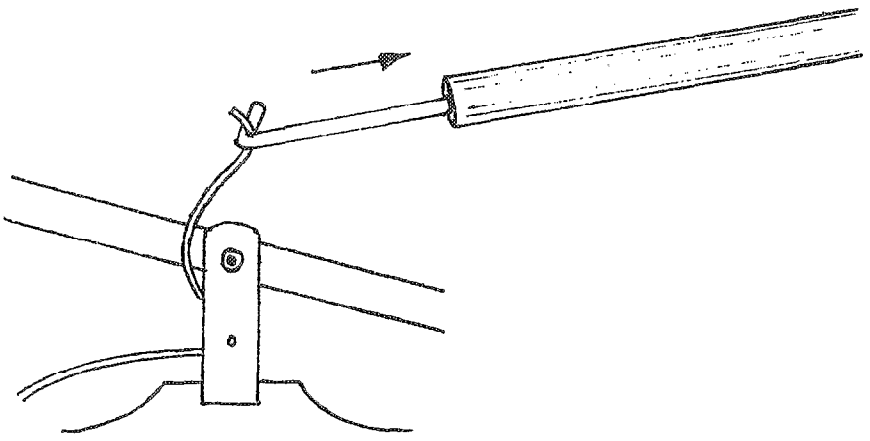


Figure 9

10. Check spacing of hammers when action is put back in piano. Make sure everything else is working properly.

Dave Tabachnick
South Setauket, New York
Long Island — Suffolk Chapter

Gadget of the Month

Clair Davies always comes up with tools that not only do the job, but also look good and have a nice feel in the hand. One has only to pick up one of Clair's tools to realize his love of them. This month's feature is the nicest spring tool I think I have ever touched; not as heavy-duty as some of the all-steel tools available, but easier to use because of its balance and overall light weight. If you do more than occasional regulating on

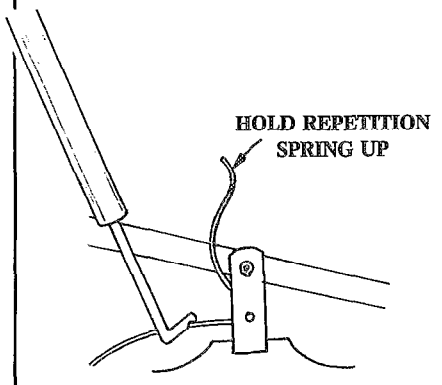


Figure 10

butterfly whippens, you should try one of these. Here's Clair:

"The technical stuff in the *Journal* keeps getting better and better, not only yours but everybody's! I *know* what's happening. We're turning each other on! Technicians all over the country are taking a new look at what they're doing and then doing some darn good writing about it. I feel proud of all our new technical writers — and not just a little jealous.

"I want to add some things to the article on the regulation of the repetition spring by David Pitsch (Sept. '82). My perception and approach differ a bit from his.

"The best tool I've seen for regulating the spring is one I made myself (**Figure 7**). It's extremely simple and extremely cheap. With a 3 inch piece of coat hanger and a 5¾ inch piece of dowel you can make, in a few minutes, a much better tool than you can buy anywhere. Some think a notch on top of the wire is also needed but it's not.

"I got the idea for this tool from Henry Zimmermann in the shop at Steinway Hall in 1960 when he was teaching me to regulate. Henry drank warm tea from a glass all day long, a very European habit come to find out. But I was just a green kid, new to the cosmopolitan life of the city and I thought he was drinking straight whiskey all day long. It was a long time before I found out the truth. How he stayed so stern and keen-eyed was a real puzzle, and *impressive* — until the day I stole a nip while 'Heinrich' was out of the room. Tea! Good gosh!

"I felt kind of let down for awhile, then I decided I was glad Henry was not a drunk. Henry knew a heck of a lot and I wanted to emulate him, but I sure didn't want to go that far.

"Henry taught me the old-fashioned way: if the strength of the spring is within the right range, you regulate it by making small changes in the curve of the upper segment. Weaken it by stroking up on it while it's in the balancier groove (**Figure 8**); strengthen it by removing it from the groove and pulling on it in the direction of the balancier flange (**Figure 9**). Neither operation will affect the coil when carefully done, and it's uncomplicated.

"After I left Henry, experience taught me some more: When disengaging the spring from the groove it's easy to accidentally push it down too far. This will close the coil and *completely kill the spring;* no amount of bending of the upper segment then will make the hammer wink. I've seen springs bent into a half circle to no effect. I've seen them kinked.

"The solution is to open the coil again. No fear, it's engineered to a loose fit on its pin anyway. (If the pin is teflon replace it with cloth and a center pin. Replace them all. Be brave, it's quickly done and will eliminate at least half of your mysterious clicks.) To open the coil place the spring tool on the *bottom segment* of the spring near the coil (**Figure 10**). A very little pressure downward with the tool while pulling up on the upper segment with the fingers will open the coil enough to allow the spring to be regulated in the usual way — Henry's way, that is.

"Not everybody liked Henry. He was picky, he breathed down your neck. He breathed down my neck and helped make *me* picky. I'll always love him for it."

Clair Davies, RTT
Lexington, Kentucky
Blue Grass Chapter

Tech Tips

Our first tip concerns the replacement of an upright action without damaging its

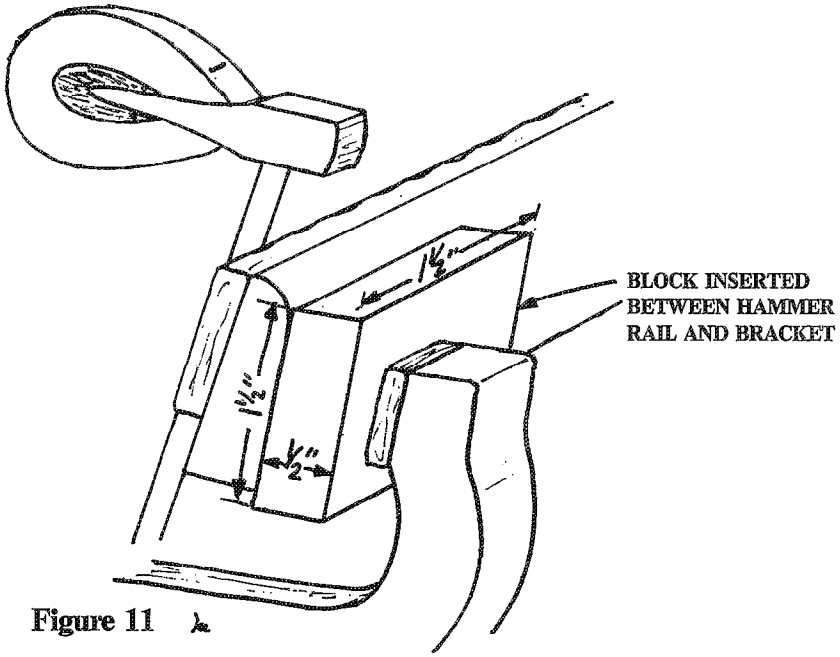


Figure 11

stickers. Here is our correspondent:

"I'm an apprentice in the Puget Sound Chapter in Tacoma. I guess most of us have broken a sticker or two trying to put a heavy action in a tight-fitting old upright. I have solved this by sticking a piece of wood between the action bracket and the hammer rail on the bass side. This causes the hammers to be pushed toward the strings and the whippens to be raised. Then the action can be installed with ease. Of course, the bridle straps should be in good shape. This also works if the action is in and you are easing keys. Stick the block of wood in and the keys are removed easier."

Fred McCall
Kent, Washington
Puget Sound Chapter

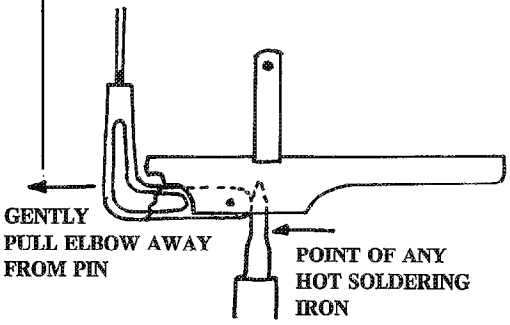


Figure 12

Fred's idea is illustrated in **Figure 11,** a variation of the method of blocking the rail with a rubber tuning mute. Thanks, Fred.

Our next tip is from Larry Laravela, who has written before with useful ideas for string replacement, action removal and other things. This time Larry has another idea for the removal of plastic spinet elbows, illustrated in **Figure 12.** Here is his idea:

"... no more splitting out old plastic with needle-nose pliers. Just heat the back of the elbow and pull it out. Use the point of any soldering iron. If the iron is hot, the elbows will come off the pins cleanly in ten seconds or less. This avoids the messiness of splitting plastic elbows with pliers, with the pieces all over the customer's floor. If a piece is hanging, grab it with pliers and heat the back surface and it will come off also..."

Larry Laravela
Wilmington, Delaware
Delaware Chapter

In Conclusion

We received a letter from Arlie D. Rauch, Box 148, White Lake, South Dakota. Mr. Rauch has been asked to rebuild the action of a Hajak grand which was made in Vienna. It has the German bumping action with backwards-facing hammers suspended on kapsels. Any information regarding the rebuilding and regulating of this action would be appreciated.

Our thanks to all of this month's contributors. Please send all technical material for publication to me at this address:

Jack Krefting, Tech Ed, PTJ
3802 Narrows Road
Erlanger, KY 41018

(Note: Charles Huether, our Vice President and always avid piano historian, has submitted the following reprint. The Helmholtz Society later became the NAPT, which with the ASPT became the Piano Technicians Guild; so Charlie points out that our organization goes back more than 78 years. — J.K.)

The Helmholtz Society of America

An Official Statement of Its Aims and Purposes by Acting President William B. White. —Tribute to the Work of "The Music Trades" for the Practical Men of the Pianoforte Industry.

The Helmholtz Society of America is permitted, through the courtesy of the editor of *The Music Trades*, to make its public bow under the most favorable auspices. It seems peculiarly fitting that the columns of the only trade journal that has ever considered the interests of the practical men of the pianoforte industry should be the medium whereby what will surely become a body of national scope and influence should make the first public statement of its aims, hopes and intentions.

The news columns of this paper have already contained notices of the meetings and proceedings of "The Society of Piano Tuners of New York." This is the body which, under the new style and title of "The Helmholtz Society of America," presents itself to the notice of the practical piano men, and particularly of the tuners, of the United States. We propose to take advantage of the opportunity afforded to us by the courtesy of Mr. Freund to explain, concisely, the *raison-d'etre* of our existence and the ideas which originally prompted the movement.

We do not expect to be contradicted when we say that the profession of pianoforte tuning is afflicted with manifold and glaring evils. Musicians in general, to say nothing of the rest of the public, are absolutely ignorant, both of the basic principles of our art and of its intrinsic delicacy and difficulty. The whole matter of musical intonation, no less than the specific problem of temperament, is, to them, as a sealed book.

Is it, therefore, wonderful that the conscientious tuner so often finds that his efforts are unappreciated and that the most subtle refinements of his art are wasted upon dull or careless ears? Is it, even, surprising that the incompetent and the fakir flourish, as the wicked, "like a green bay tree?" We think not; but, even so, we are far from believing that this distressing state of affairs is either necessary or inevitable. We recognize that the tuners, as a body, are themselves much to blame for the indifference with which their conscientious work is usually received. In too many cases they have attempted to throw around the practice of their profession a veil of mystery that, while totally ineffective to secure greater respect for themselves, permits the seldom deserved imputation of charlatanism and chicanery.

On the other hand, however, we feel that, as was said before, our art is not only not generally appreciated; it is not even understood. A good tuner is a man who has spent years in hard and continued study and practice; who has cultivated an extraordinary acuteness of ear, and who has been obliged to acquire at least a working knowledge of acoustics and music, both separately and in relation to each other. To such a man, the knowledge that he is not regarded as being at all superior, mentally, to the average carpenter or plumber is truly humiliating. Yet the attitude of the general public towards the practitioners of our art is in no essential dissimilar to this. Until, however, the people in general are educated up to the point of abandoning this false viewpoint and assuming one which will give them a true perspective, these evils will assuredly continue to flourish.

The Helmholtz Society of America pleads these facts as reasons for its existence. It believes, first, that the evils complained of may be eradicated, and, second, that this can only be done by concerted action on the part of the tuners themselves. The specific programme that the society has made its own may, therefore, be stated in terms as follows: It is our aim and purpose to unite the army of conscientious and competent practitioners in a compact and homogeneous body; to secure public notice and recognition of the existence of that body; to limit membership to those whose professional standing is beyond question, and in this way to afford some standard of comparison, some criterion, whereby the artist may be at once distinguished from the charlatan.

Ambitious as this programme may and does appear, and great as are the difficulties that must be overcome, we nevertheless approach our self-imposed task with confidence. We believe that it is only necessary that the existence and aims of this society should be known publicly for it to receive a large measure of support from the host of good tuners who are, by their ability and standing, eligible for membership.

Our proposals may, therefore, be summed up as follows: The society aims

to become, to the tuners, what, for example, the Institute of Civil Engineers is to the men in that profession; a body, membership in which is equivalent to an unimpeachable certificate of competency and excellence.

To come down to details, we may say that the membership of the society is confined to "wareroom, ouside and independent tuners," who must, in addition, show proof, by examination, of their ability to attain to the standard of proficiency maintained by the society. It was thought best to make such a limitation for various reasons. The outside or independent tuner is peculiarly liable to be affected by the unhealthy conditions mentioned above and he needs protection and the power of an organization behind him more than does his brother of the factory. The existing membership of the society is composed entirely of tuners who come up to these requirements and we count among our number representatives from the best warerooms in New York City, including the justly celebrated house of Steinway & Sons.

Here, then, we rest our case and appeal to the tuners throughout the country to examine carefuly the points that we have made and the task that we have set ourselves to perform. We invite criticism and we are both ready and anxious to answer inquiries. We shall be glad to furnish information to all who may desire it and letters addressed to C. A. Gregory, No. 12 East Fourteenth Street, New York, will receive prompt attention.

The Helmholtz Society of America,
Per William B. White, Acting President.

New York, March 21, 1904.

Coming Events

Notices of seminars will be accepted for insertion in THE JOURNAL no sooner than six months before an event. In addition to the listing below, your seminar may be publicized through one free display ad, two columns by two inches deep. It is the responsibility of the advertiser to submit copy for the ad to the Home Office. Material must be received six weeks prior to the publication of THE JOURNAL.
NOTE: All seminar dates must be approved by the Conference Seminar Committee. Please submit the appropriate information on the Request for Seminar Approval Form which may be obtained from the Home Office.

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

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

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

April 28-30, 1983
NEW ENGLAND REGIONAL SEMINAR
Ramada Inn
Mystic, CT
Contact: Walter W. Brooks, Jr.
376 Shore Road
Old Lyme, CT 06371
(203) 434-0287

LOCAL CONVENTIONS AND SEMINARS

February 18-20, 1983
CALIFORNIA STATE CONVENTION
Woodlake Inn
Sacramento, CA
Contact: James G. Bryant
P.O. Box 20513
Sacramento, CA 95820
(916) 454-4748

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

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

The History of the Fairchild Temperament

Owen Jorgensen, RTT
Lansing, MI Chapter

Steve Fairchild's "Altered Equal" temperament was published on pages 20 and 21 in the October 1982 issue of the *Piano Technicians Journal.* The first known practice of the Fairchild temperament was by Francesco Antonio Vallotti,[1] an Italian composer living between 1697 and 1780. His colleague, the famous Giuseppe Tartini (1692-1770), praised this temperament. In England, the Fairchild temperament was published in 1800 by Thomas Young.[2] In more recent times, the Fairchild temperament was rediscovered by Van Biezen in 1970, and G.C. Klop states that it "is certainly superior to equal temperament."[3] This temperament was used for a piano concert at Michigan State University on October 6, 1974. Since then, many fortepianists and harpsichordists have used it in their performances. Some of them refer to Fairchild's temperament as the "Beethoven" temperament because of Young's publication date in the middle of Beethoven's career.

The Fairchild temperament is one of the many forms of well temperament[4] that were practiced during the eighteenth century. It is popular with modern harpsichordists and fortepianists because the four cent, narrow-tempered fifths beat slower than the tempered fifths in most of the other historical well temperaments, and modern performers are influenced by the slowly beating equal-tempered fifths that they have become accustomed to. During the eighteenth century, however, the taste of musicians for various tempered intervals was contrary to what it is today. Then, fifths and fourths tempered by five-and-one-half cents were considered standard, and fifths tempered by as much as eleven cents were still considered musical. At the same time, eighteenth century ears could not tolerate much tempering of the thirds and sixths on the diatonic keys (the white keys of the modern piano). They struggled to tune these thirds and sixths as just or pure as possible; and yet, they insisted on being able to perform in all the keys and tonalities. Although some eighteenth century musicians were aware of the philosophy of equal temperament, they very rarely applied it in practice. Equal-tempered thirds and sixths on the commonly used diatonic keys were considered to be in bad taste because of their brilliance and harshness. Also, the lack of accessible information on beat speeds and testing intervals rendered equal temperament impractical to tune. Most theorists realized that the actual tuning of real equal temperament was unlikely in practice. Sets of tuning forks, monochords, and other tuning aids were available, but the tuning results were crude. In short, the Fairchild variety of well temperament was no doubt used in the eighteenth century to some extent, but most musicians probably judged it a little on the difficult side to tune. Other forms of well temperament were available. These had faster beating tempered fifths, but they were significantly easier to tune. The Kirnberger temperaments[5] were the easiest.

The Andreas Werckmeister Correct Temperament No. 1, sometimes referred to as Werckmeister III, was published in 1691.[6] This set the general style and form for all the well temperaments published after that. Most of them were sophisticated varieties of the original Werckmeister ideal. The Vallotti, Van Biezen, and Fairchild systems are identical, and while they treat the primary thirds CE, FA, and GB in a conventional manner, they are unconventional in that the major third A-flat C is not as wide as the major third BD-sharp. This creates the effect that F-sharp major is the most brilliant key in the Fairchild. During the eighteenth century, C-sharp major was usually considered the most brilliant key because it was the most altered key. C major was considered the most mellow or best key because there were no accidentals in the key signature. More clearly, F-sharp major contains six sharps, G-flat major contains six flats, but C-sharp major contains the ultimate alteration of seven sharps. C-flat major with seven flats was not used. In print during the eighteenth century, D-flat major was really C-sharp major rendered easier to read.

[1] *The New Grove Dictionary of Music and Musicians,* Vol. 18 (London: Macmillan Publishers Ltd., 1980), page 668, col. 2.
[2] *Philosophical Transactions of the Royal Society of London,* Vol. 90, January 1800, page 145.
[3] G.C. Klop, *Harpsichord Tuning* (Garderen, Holland: Werkplaats voor Clavecimbelbouw, 1974), pages 26 and 27.
[4] "Well temperament" is a technical term for all the *un*equal historical temperaments in which the key of C major is more harmonious and closer to just intonation than the others, while still permitting one to perform in all the keys with the same utility as in equal temperament. This may be an unconventional use of the word "well," but it serves as a constant reminder of the style of temperament intended by Bach for his *Well-Tempered Clavier.*
[5] Johann Philipp Kirnberger, *Die Kunst des reinen Satzes in der Musik* (Berlin: H. A. Rottman, 1779).
[6] Andreas Werckmeister, *Musicalische Temperatur* (Franckfurt: In Verlegung T. P. Calvisii, 1691).

The Thomas Young version is the same as Fairchild's except that it is transposed slightly. When the Young temperament was published in 1800, the C tuning fork was somewhat traditional, and so the six pure fifths were efficiently tuned from C. For Fairchild's arrangement, one should purchase an F or a B fork. In the Young temperament, the major thirds that are one syntonic comma wide are placed in the Werckmeister position for the traditionally brilliant Pythagorean key of C-sharp major, but this caused the major third FA to be a little too wide. Thus, the Fairchild and the Young each have a minor flaw in eighteenth century tradition.

The answer to the above problems of tradition and the problem of difficult tuning is solved by a temperament known as the "common model well temperament." In this extremely easy to tune temperament, five fifths are tempered unevenly, and seven fifths are tuned pure. In the well temperaments, there is no need to temper the fifths evenly. The common model temperament is also known as the Bendeler-Young Composite,[7] and it contains the pure fifths of both Young and Bendeler. This temperament is really a composite of all the important seventeenth, eighteenth, and early nineteenth century well temperaments, and it contains the traditional ideals of Werckmeister. In fact, it differs from the equal-beating arrangement of the Werckmeister temperament only for the tone B.[8] All the other eleven tones agree exactly.

Practically all of the keyboard music composed or published before 1809 is dramatically improved when it is performed in any of the well temperaments including the Fairchild-Young. This is easily verified by examining eighteenth century music such as Mozart's and observing that the vertical sonorities involve the white keys more than they do the black keys. Steve Fairchild correctly described well temperament when he stated that the "keys of C, F, and G will be mellow." This is where the performance benefit lies. For a large share of the piano music written after 1815, well temperament is damaging, and it actually destroys Debussy. For music written during much of the Romantic period, various quasi-equal temperaments can noticeably improve piano performances. For Debussy and most music written afterwards, strict equal temperament is required.

Steve Fairchild stated that "most have agreed that there was a great improvement in the overall sound of the small piano" when it was tuned in Fairchild's temperament. In part, this may be due to using the eighteenth century style of harmonies to demonstrate the piano. Also, it is true that the Fairchild-Young temperament as well as all the other important well temperaments solve most of the problems of inharmonicity within the temperament octave. This is accomplished by always tuning the just or pure intervals first. More importantly, there is "a great improvement in the overall sound" because the six pure fifths of the Fairchild-Young temperament allow there to be twelve major and minor triads within each octave that contain tempered intervals that beat in simple proportions to each other. These triads create a reinforcement of resonance among the upper harmonics. As an example, in the F-sharp minor triad, F-sharp A beats exactly the same speed as A C-sharp. In the F-sharp major triad, F-sharp A-sharp beats exactly two-thirds as fast as A-sharp C-sharp. The fifths in both cases are pure. In the first example, the intervals have a one-to-one proportion of beat speeds. In the second example, the intervals have a three-to-two proportion of beat speeds. These exact simple proportions of beat speeds in major and minor triads do not exist in equal temperament. In the Bendeler-Young Composite, there are sixteen simple proportionally beating triads, and this is a thirty-three percent improvement over the Fairchild-Young temperament.

It has now been seveal decades since Debussy, Ravel, Bartok, Prokofieff, and other time-proven modern composers began composing music that demands the atonal qualities of exact equal temperament. Recent trends in serious piano composition have been in the direction of music that is so dissonant and

abstract that the formal strict relationships between the tones of any particular temperament are no longer necessary. This relegates exact equal temperament to the position of being just another historical temperament that eventually will be associated with the nineteenth century and the first half of the twentieth. If equal temperament is placed in a proper perspective, one can realize that the autocratic power that equal temperament has had over the music world since the middle of the nineteenth century is now over. Equal temperament is gradually losing control over groups of composers like the Xenharmonists who are creating many new temperaments, composers who utilize the electronic capabilities and prepared piano effects, and composers using avant-garde temperaments like the "five and seven." When temperaments change in history, the truth is that one is never superior to another. Equal temperament is no better than Kirnberger's temperaments; it is only different. For every change in history there has been a gain balanced by a corresponding loss. There is no longer any reason for not restoring temperaments of the past for performances of the older music that is loved by today's society.

It is very fitting and commendable that Steve Fairchild as well as other technicians should begin using any temperaments that can make the instruments sound better. In this spirit, several Piano Technicians Guild craftsman members have reported to me that they use the Marpurg temperament[9] for all of their customers. These technicians are suc-

[7]Owen Jorgensen, *The Equal-Beating Temperaments* (Raleigh: The Sunbury Press, 1981), page 29.
[8]Owen Jorgensen, *Tuning the Historical Temperaments by Ear* (Marquette: Northern Michigan University Press, 1977), pages 307-309.
[9]Friedrich Wilhelm Marpurg, *Versuch uber die musikalische Temperature* (Breslau: J. F. Korn, 1776).

cessful because most pianists are not playing the music written after Debussy frequently enough.

Simplified tuning instructions for the Young-Fairchild temperament are on pages 27 and 28 of the book *The Equal Beating Temperaments.*[10] The instructions for the common model well temperament are on page 29 of the same book. Detailed and complete tuning instructions including all the practical testing intervals for two versions of the Young-Fairchild temperament are on pages 322 through 329 of the book, *Tuning the Historical Temperaments by Ear.*[11] In the same book, there are complete instructions for equal temperament, pages 206-210; Kirnberger, pages 248-265; Bendeler, pages 272-282; Werckmeister, pages 302-309; Marpurg, pages 351-371; and the "five and seven" temperament, pages 396-402.

For tuning the eighteenth century common model well temperament (Bendeler-Young Composite), a fourteen-note temperament section from F to F-sharp is required. Set middle C to a standard C fork or to any other arbitrarily chosen pitch. Tune F pure to C, and then tune all the black keys by means of pure fourths and fifths from F. Tune the two octaves F and F-sharp. Average out D between B-flat and the upper F-sharp so that both major thirds beat the same speed. Do the same with G averaged between C and D. Make certain that the fourth GC does not beat any faster than the fifth GD. Next, average A between the lower F and D so that both intervals beat the same speed. Tune E pure to A. Finally, average B between G and E so that both intervals beat the same speed.

The above tuning instructions clearly show how the musicians of past centuries were able to accomplish good tuning results without a standard pitch, without a knowledge of any specific beat frequencies, and without a knowledge of testing intervals.

[10]Owen Jorgensen, *The Equal Beating Temperaments* (Raleigh: The Sunbury Press, 1981).
[11]Owen Jorgensen, *Tuning the Historical Temperaments by Ear* (Marquette: Northern Michigan University Press, 1977).

THEORETICAL BEAT SPEEDS AND CENT WIDTHS FOR THE COMMON MODEL WELL TEMPERAMENT (CHART #1)

ROOT NOTE	KEY NUMBER	ASCENDING INTERVALS							
		MINOR 3rds		MAJOR 3rds		4ths		5ths	
		BEATS	CENTS	BEATS	CENTS	BEATS	CENTS	BEATS	CENTS
F3	(33)	12.9	21.5	2.8	5.5	0.0	0.0	0.0	0.0
F#3	(34)	8.9	14.1	11.5	21.5	1.0	2.4	0.0	0.0
G3	(35)	11.5	17.0	2.8	5.0	2.1	4.5	2.1	6.1
G#3	(36)	13.6	19.1	12.9	21.5	0.0	0.0	0.0	0.0
A3	(37)	4.1	5.5	8.9	14.1	2.8	5.4	0.0	0.0
A#3	(38)	17.2	21.5	7.3	10.9	0.0	0.0	0.0	0.0
B3	(39)	9.4	11.1	13.6	19.1	2.8	5.0	1.0	2.4
C4	(40)	19.4	21.5	4.1	5.5	0.0	0.0	2.1	4.5
C#4	(41)	13.4	14.1	17.2	21.5	0.0	0.0	0.0	0.0
D4	(42)	11.0	10.9	7.3	8.7	4.1	6.1	2.8	5.4
D#4	(43)	23.0	21.5	15.3	17.0	0.0	0.0	0.0	0.0
E4	(44)	11.3	10.0	13.4	14.1	0.0	0.0	2.8	5.0

THEORETICAL FREQUENCIES FOR THE COMMON MODEL WELL TEMPERAMENT (CHART #2)

NOTE	KEY NUMBER	PARTIAL NUMBERS					
		1	2	3	4	5	6
F3	(33)	174.417	348.834	523.251	697.668	872.085	1046.502
F#3	(34)	183.748	367.496	551.244	734.992	918.740	1102.488
G3	(35)	195.705	391.410	587.115	782.820	978.525	1174.230
G#3	(36)	206.717	413.433	620.149	826.866	1033.583	1240.299
A3	(37)	218.709	437.418	656.127	874.837	1093.546	1312.255
A#3	(38)	232.556	465.112	697.668	930.224	1162.780	1395.336
B3	(39)	245.340	490.679	736.019	981.358	1226.698	1472.037
C4	(40)	261.626	523.251	784.877	1046.502	1308.128	1569.753
C#4	(41)	275.622	551.244	826.866	1102.488	1378.110	1653.732
D4	(42)	292.529	585.059	877.588	1170.118	1462.647	1755.176
D#4	(43)	310.075	620.149	930.224	1240.299	1550.374	1860.449
E4	(44)	328.064	656.127	984.191	1312.255	1640.319	1968.383
F4	(45)	348.834	697.668	1046.502	1395.336	1744.170	2093.005
F#4	(46)	367.496	734.992	1102.488	1469.984	1837.480	2204.976
G4	(47)	391.410	782.820	1174.230	1565.641	1957.051	2348.461
G#4	(48)	413.433	826.866	1240.299	1653.732	2067.165	2480.598
A4	(49)	437.418	874.837	1312.255	1749.673	2187.092	2624.51

Note that A is flat. This is because a standard pitch C fork is used.

Sound Background

Jack Greenfield, RTT
Chicago Chapter

Late Renaissance Meantone Intonation

Conditions Favoring Tuning Changes

Advances in the use of harmony in musical structure and the rise of keyboard instruments, particularly the harpsichord, to dominance in musical activities influenced and accelerated the changes in tuning that took place during the sixteenth century. In orchestral music, a style of instrumentation which originated in England to emphasize harmonic effect was the consort, a chamber music ensemble of members of the same family of instruments. Instruments of each type were made in sets of different sizes to provide a complete range from soprano to bass in one uniform timbre. This resulted in such unusual instruments as a very small *soprano bassoon* and a *contrabass recorder* over nine feet long. Instruments were redesigned also to increase their loudness and fullness of tone.

Keyboard instruments which by themselves were capable of providing harmonic music of uniform tone color across a wide range of pitch began to flourish. The organs in the church became larger and more refined, but the smaller portative and positive organs gave way to the clavichord and harpsichord which were more practical for the concert salon and the home.

Rise in Harpsichord Popularity

The emergence of keyboard stringed instruments now, about one and one half centuries after their introduction, while presenting more difficulties to be overcome for a practical tuning system, made investigation much easier. Making tuning changes in an organ was not a simple operation that could be undertaken by anyone without assistance. On the other hand, tuning the harpsichord or clavichord required much less effort and skill.

Italy, which led the way in the study of music theory, also became a leader in harpsichord making during the sixteenth century. Production was carried on mainly at scattered locations in the northern region. Evidence of the extensive manufacture that existed is the large number of Italian harpsichords of that period still surviving — over one dozen with verified sixteenth century dates beginning with a 1521, and 47 key instruments built in Rome, several with unverified earlier dates and several undated of possible sixteenth century origin. Few design changes were made in the Italian instruments; the earliest show many similarities to instruments built 150 years later. The earliest Italian clavichord now in existence is dated 1548. The earliest surviving harpsichord from Flanders, where manufacture did not become significant until later, is dated 1548. Few harpsichords were built elsewhere in Europe during the sixteenth century.

Aron's publication of his method for harpsichord tuning in 1523 came at the start of a period in which the harpsichord rose to great popularity, with meantone temperament in ¼ comma as well as in other forms becoming firmly established for keyboard tuning. However there also appeared other types of tuning systems with ardent supporters. The debates between the advocates of different principles of intonation became very heated and almost approached the intensity of political and religious controversy. Some of the debates over consonance, dissonance, and "sonorous numbers" seem trivial today.

Just Intonation With Mean Tempered Intervals

While many of the others who favored just intonation objected to tempering, Fogliano, a theorist quite receptive to fresh ideas, with a belief in the ear as a better judge of musical value than numerical traditions, presented a monochord pattern which included several mean tempered intervals in an otherwise just cycle. His 1529 book *Musica theorica* contains the following temperament (as shown in modern units by Barbour):

Fogliano's Tempered Just Intonation
(Cents above low C)

	C♯ − 2		E♭ + 1			F♯ − 2		G♯ − 2		B♭ + ½		
C0		D − ½		E − 1	F0		G0		A − 1		B − 1	C0
0	70	193	316	386	498	568	701	772	884	1007	1088	1200

This is based on a pair of just tuning cycles from E^{b+1} to $G^{\#-2}$ differing only in B^{b+1} or B^{b0} and D^0 or D^{-1}. The temperament contains the mean tempered notes $B^{b+1/2}$ and $D^{-1/2}$. This gives the four mean tempered fifths: E^b B^b, B^b F, G D, and D A, (691¢) 9¢ smaller than pure. All other fifths are pure except for $G^\#$ E^b and B $F^\#$. Later scholars suggested that $F^{\#-2}$ be replaced by $F^{\#-3/2}$, thus adding two additional tempered fifths in place of the original wolf and pure fifths B $F^\#$ and $F^\#$ $C^\#$. Fogliano's tempering increased the number of usable triads in his original just tunings.

Fogliano was one of the first scholars to offer a physical explanation that differed with the numerological belief, inherited from ancient times, that musical sounds were properties associated with particular numbers. He believed sound had no material existence but was caused by some type of rapid motion, a theory which was proved correct by the developments in acoustic science later.

Agricola's monochord in his book published ten years later was a just tuning similar to Ramis' except for rearranged positions of usable and unusable intervals. There were some new advantages, but there were disadvantages also; problems inherent in strict just intonation could be shifted but not eliminated.

In 1543, Sylvestro Ganassi published a method for another type of mean just temperament. In this the diatonic notes were in just intonation but the accidentals were equal semitones formed by linear divisions on the lute or viol. Grammateus' 1518 monochord had had mean semitones also but his basic diatonic scale was tuned in Pythagorean intonation. Later theorists developed other versions of just temperaments with mean semitones as well as meantone diatonic temperaments with mean semitones.

Meantone Temperaments of Late Renaissance

During the second half of the sixteenth century, as meantone intonation advanced its domination of practical keyboard tuning, the scholars increased their investigation of meantone theoretical principles. Zarlino now acknowledged the pleasing sound of meantone. In his 1558 book *Institutioni arminche*, he presented the first published mathematically precise meantone temperament. For this reason Zarlino is given credit by some references for introducing meantone; but he gave the 2/7 comma (about 6¢) meantone temperament, a much lesser-used form than 1/4 comma. Zarlino included a discussion in his book on why he considered 2/7 comma preferable.

Unique characteristics of this temperament include:

1. Chromatic semitones are just with an interval ratio of 25/24 (70¢).
2. The major and minor thirds are flat and the major and minor sixths are sharp, each tempered by the same amount, 1/7 comma (about 3¢).
3. The intervals of minor triads beat at the ratio 1:1:1 giving a rhythmically harmonious sound. Jorgensen suggests use of 2/7 comma meantone temperament for music with predominantly minor chords.

Zarlino changed his mind about 2/7 comma meantone later. He became critical of it and considered 1/4 comma meantone, which he described in detail in his 1571 book, to be preferable.

In 1577, Salinas published his *De musica libri VII*, a comprehensive treatise on temperament covering a number of different phases including Greek genera, just tuning, and meantone and equal temperament. Salinas implied that he had used 1/4 comma meantone as far back as the 1530's. He also gave the first precise details on the 1/3 comma meantone temperament he is credited with having invented, probably several decades earlier, since it was discussed in Zarlino's 1558 book.

Minor thirds (6:5) and major sixths (5:3) are pure. Major thirds and fifths flattened 1/3 comma (about 7¢) are the smallest occurring in any of the meantone temperaments. In the opinion of some modern scholars, such major thirds sound weak in comparison with the larger thirds of other intonations. It is unlikely that 1/3 comma meantone temperament had much use in practical music. Salinas may not have intended

Continued on page 23

Zarlino's 2/7 Comma Temperament
(Cents above low C as shown by Barbour)

	$C^\#-2$		$E^b+6/7$			$F^\#-12/7$		$G^\#-16/7$		$B^b+4/7$		
C^0		$D-4/7$		$E-8/7$	$F+2/7$		$G-3/7$		$A-6/7$		$B-10/7$	C^0
0	70	191	313	383	504	574	696	817	887	1008	1078	1200

Salinas' 1/3 Comma Temperament
(Cents above low C as shown by Barbour)

	$C^\#-7/3$		$Eb+1$			$F^\#-2$		$G^\#-8/3$		$Bb+2/3$		
C^0		$D-2/3$		$E-4/3$	$F+1/3$		$G-1/3$		$A-1$		$B-5/3$	C^0
0	64	190	316	379	505	569	695	758	884	1010	1074	1200

After Touch

David Pitsch, RTT
Utah Valley Chapter

50 Point Guide To Grand Regulation Part XXVIII

Step #42
Check Damper Guide Rail, Ease or Rebush

All of the felts in a piano eventually wear out with age or use. One of the more overlooked areas of wear is in the damper guide rail. Perhaps the reason the guide rail, and for that matter, the entire damper system, is overlooked is because technicians hate to work on the dampers. Granted, the work is tedious, frustrating, and often a source of complaint from the pianist when it is not functioning correctly. However, the solution is to learn how to regulate the dampers, not to avoid it!

New pianos are much easier to work on since the felts are (or at least should be) in good shape. Before attempting to regulate the dampers, the first thing to check is the damper guide rail. One by one raise each damper head with your hand. Gently rotate it inside the hole and check to see if the damper wire has proper clearance. If it does not, then the *hole* will have to be eased. If it is too loose, then the felt must be replaced. Let us assume the worst and talk first about rebushing the damper guide rail.

Preferably this should be done in a shop, although it doesn't have to be if you know how to do the job. Remove and store safely the action to the piano. Build a holder for the damper head/wires. I use a piece of firring strip 1" x 2" x 60". Blocks 3" x 3" x 1" are glued on to the ends of the fir strip. Holes are drilled about ½" apart, just large enough to fit the damper wires, but not so large as to let the dampers fall out if the fir strip is lifted upside down. Each hole is numbered and felt is glued onto the bottom of the 3" x 3" blocks.

Position the holder directly in back of the damper guide rail, letting it rest on the case, soundboard, strings, or whatever. Loosen all of the screws on the damper wire blocks. Carefully, making sure that the wires do not get bent out of shape, remove each damper head/wire from the wire block, pulling it through the guide rail and inserting it into the proper numbered hole in the damper wire holder. This is most easily done by starting at damper number one and working up. Spread the strings on each side of the screws for the damper guide rail, and remove the screws and rail. Either mark the screws for the holes, or else screw them back into their holes.

If the guide bushings were press fitted into the holes, removal of the felt will be easy. Where they were glued, take the damper guide rail to a drill press and punch the old bushings out. Make sure the holes are cleaned. Before the new felt is installed, I like to sand and refinish the guide rail to make it look as good as I can. Ony the highest grade bushing cloth should be used to rebush the guide rail. Often this grade of cloth is not available domestically. Buy it in large sheets. *Tear* a strip from this sheet to the proper width to fit the guide hole. When the felt is inserted into the hole, the torn ends of the cloth will tend to mesh together at the seam.

Cut the cloth into 6" strips and taper one end so that it can be started into the hole. Insert the cloth through the guide rail hole from the top down. That is to say, the excess cloth will protrude from the counter-sunk side of the hole. Put a drop of glue onto the cloth on the counter-sink, and cut off the excess. I realize that not everyone likes to glue their damper guide rail bushings in. The only comment I can make is that those people must not have had the experience of pushing a damper bushing out the bottom of the hole while trying to ease a tight bushing! Use hide glue for this job.

Reinstall the rail and dampers reversing the process used to remove them. Again, be careful not to bend the damper wires. When the wires are being inserted back into the wire blocks, they should move freely through the brass screw holder. This is a must when regulating the damper lift from the tray and key. If the wire does not pass freely into the hole, take a small drill bit (one smaller than the hole) and using the shank of the bit, not the cutting end, rotate the bit inside of the wire block screw hole. These brass inserts are just press-fitted and sometimes get turned a little when the screw is tightened against the damper wire. The drill bit will reposition this brass insert to allow the wire to move freely inside the hole.

Regulating the damper wires will be covered in the next two steps on the checklist. Now let us talk about what to do if a damper wire is sluggish and needs to be "eased." To help find such tight bushings, one quick way is to raise and lower all of the dampers using the sustain pedal. Any sluggish dampers will return slowly. Don't come to conclusions yet, though, as sluggish dampers can be caused by things other than the damper guide rail. Also, although the dampers do return fast enough using the sustain pedal, they may still have excess friction at the guide hole.

Remove the action, and with a finger raise each damper lever from inside the piano. This is the only sure-fire method that I know of to find excess friction in the dampers. Most of the time, the problem is not with the tolerance in the guide hole, but rather a misalignment of the damper wire! Sometimes a sluggish damper is due to a tight flange. Woe to the technician who immediately gets out his umbrella easing tool before checking the damper wire. Even worse is the one who tries to use silicone lube on the wire! Although the umbrella tool is acceptable when the bushing itself is too tight, neither the lube nor the tool will help if the wire is misaligned. The damper wire must run straight through the guide hole, as well as into the wire block. I use compound wire bending pliers to align the damper wires. I would say that 75% of the problems with sluggish dampers involve bending the wires to correct. For the other 25% where the bushing is indeed too tight, remember that it is not enough to ease the bushing felt. This is

only temporary, and as soon as the felt swells back, the damper will be sluggish again. In easing tight damper guide rail bushings, the trick is to ease or crush the *wood* around the hole.

In much the same sense, when in a pinch because of lack of time, lack of money on the owner's part, or lack of quality on the manufacturer's part, if rebushing a hole is not practical, I will glue size the rail. This is particularly effective if the last technician over-eased the hole. Using a syringe with half water and half glue, I'll put a drop on the rail right next to the bushing. This will swell the wood and size it much like fixing a worn center hole in a key.

As a final note on step #42, there is a frequent problem with the dampers in the bichord bass section with pianos manufactured from a certain Asian company. Many times I have been called out to handle this problem, often being the third or fourth technician to be sent to correct the problem. The diagnoses have been many. One person says the problem is because the damper wires are made of too soft a metal. He eased the holes with his umbrella tool without crushing the wood. Soon the dampers were hanging up again. This he attributed to soft metal in the wires! Apparently he thought the wires were bending with use! Another technician on the same piano said that the damper guide rail holes were drilled wrong causing misalignment of the wires. Yet a third technician attributed the problem to the wrong kind of felt being used on the dampers. Believe it or not, it took me less than half an hour to bend the damper wires slightly so that they ran through the guide rail straight! No complaints have been heard from this customer in over a year.

Sound Background

Continued from page 23

this temperament primarily as a replacement of other meantone temperaments but had planned it as a new system for dividing the octave into 19 divisions. This division would be the basis for recreating approximations of ancient Greek genera. Extension of a cycle of 1/3 comma tempered fifths from six flats through six sharps gives a closed circle in approximate 19-division equal temperament.

Zarlino's 1558 book had discussed a 19-division harpsichord built for him but was vague on the tuning. Such an instrument was again described by Praetoriaus fifty years later and interest in the 19-note octave has been revived occasionally since then. A 19-tone octave harmonium now in a Stockholm museum was built in 1845 for studies at that time and some investigation has continued on into the twentieth century. However there have been comparatively few advocates of 19-division. Other specialists in the study of multiple division intonation believe that the drawbacks far outweigh the desirable features and other divisions are preferable.

The trend in the chronological introduction of 1/4 comma, 2/7 comma, and 1/3 comma meantone was from pure major thirds to flatter major thirds in temperaments classified as negative meantone by Jorgensen. The publication of positive meantone temperaments with wider major thirds began later. In a 1590 book, Cyriac Schneegas presented an approximately 2/9 comma meantone temperament obtained by a geometrical procedure he had devised. The major thirds were slightly larger than pure (about 2¢). The tempering of the fifths (about -5¢) and the major sixths (about +7¢) is less than 2¢ different from the tempering of these intervals in 1/4 comma. This poses the question of whether or not the difference is significant. Schneegas justified his temperament on a theoretical mathematical basis. Except for the just augmented second, for example F $G^{\#}$ (75:64, 274¢), other references indicate no other unusual musical qualities either favorable or unfavorable.

Although 1/5 comma meantone appears to have been in use earlier, references giving specific details on this and other positive meantone temperaments were written after the start of the seventeenth century.

IN THE FIELD

Ben McKlveen, RTT
Cincinnati Chapter

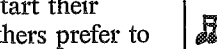
Last spring I served on a committee that tested the tuning skills of the student members of our chapter. Checking these tunings and subsequent discussions with the tuning candidates revealed some interesting problems. Granted, student tuners have problems with hammer technique. They wonder a lot about what they are listening for when they tune. Certainly, they lack solid tuning routine and the experience it takes to achieve this. What surprised me was the fact that so many of them did not use adequate checks in their tuning. In October, I did some tutoring at the Ohio State Seminar in Cleveland. Again, lack of checking was a primary factor contributing to poor tuning. Also, it seemed that the more musically trained students tended to rely on their "musical ears," and therefore avoided a technique based on good interval checking.

Temperaments can vary from tuner to tuner. I have seen some really strange combinations of intervals put together in a temperament to tune pianos. (Have you seen a temperament using just octaves and fifths? The one I observed had to be the longest I've ever seen, in terms of keyboard space, and no checks!) Most temperaments seem to have been devised to provide a system of setting an octave with speed and accuracy; teaching facility is another consideration. Tuners who use fourths and fifths as their primary tuning intervals like to work with the nearly-perfect slow beating intervals; they must rely on major thirds and sixths for testing. Conversely, those who tune with thirds and sixths do their checking with fourths and fifths. Some start their temperaments on "C." Others prefer to start on "A." Many lively and spirited discussions have taken place in defense of the relative merits of these systems.

My own attitude is very non-parochial. I don't care if you start on $F^{\#}$ and tune by augmented fourths. If the pitch and interval distribution is correct, then I'm not concerned about how you arrived at that point. But, I would be willing to wager that if you have completed a good tuning, it involved the use of a number of check intervals.

My purpose in this article is not to produce a complete discussion of tests and checks; that is much better done in any of the good texts on tuning. Rather, my objective is to offer some thoughts that might be useful in the cultivation of better tuning technique.

Let us start with the setting of the first note to the fork. Direct comparison can get you in the ballpark but is not always exact. Only a comparison check with some other note on the keyboard can place the fork and the starting tone in exact unison. A comparison of C40 and $A^{b}36$ produces a manageable beat rate. If the fork and C40 produce the same beat rate when played with $A^{b}36$, then the Cs are identical. (The correct beat rate of this A^{b}-C interval is 8 beats per second, which is the same as 16th notes at march tempo:



This is an easy place to start in the learning of beat estimation.) The technique works just as well with the "A" fork. Only the beat rate is different.

As I wrote earlier, it doesn't really matter how you tune a temperament. When it is completed correctly all intervals are in place with all other intervals. A good tuner should be able to hear this. All thirds and sixths will ascend with slightly faster beats, and the fourths and fifths will do the same but at a much slower rate. Any obvious variation in this scheme calls attention to an error and must be corrected.

In tuning the bass below the temperament, thirds, fourths, fifths, and sixths are all valuable testing intervals. When these become too slow to be effective, then the tenth can be utilized. In the very low bass, a test based on the use of the octave-minor seventh is very useful. (A complete explanation of this test is found on page 107 of *Piano Tuninig and Allied Arts* by William Braid White.)

Tenths and double tenths are useful in treble tuning and can be heard easily up to C76. In the highest octave, testing is best handled by using double octaves, chords and arpeggios.

The cultivation of good tuning skill is dependent on the regular, patient practice of the craft and the use of checks to direct and correct the progress of your work. If the knowledge or use of checks is missing from your present routine, then begin a systematic study to add these valuable tools to your tuning procedure.

In addition to faulty testing, there are some other problems that seem to be common to tuners of limited experience. Good hammer technique needs to be mastered if one is to tune with accuracy and stability. The ability to make very small moves of the tuning pin is the key

Continued on page 29

TUNE IN TO NEW ORLEANS

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The Piano Technicians Guild tours to Korea, Japan and China, in connection with the IAPBT Convention, are nearly sold out, though several members who have asked to have places reserved have not yet sent in their deposits. The reservation deadline date is fast approaching. Arrangements must be made for lodging and transportation, and visas for entering China must be made by March.

A number of letters have been received from heads of companies which we plan to visit. They are preparing for us, making plans for an unforgettable visit.

On the recent Piano Technicians Guild tour of Europe, we apologized to a director of a large piano company for disturbing their production. His reply was, "We are *honored* to have you." So it is that the Piano Technicians Guild is highly regarded abroad, and it is a rare privilege to represent the organization, and to be able to share an exchange of ideas!

If you plan to join the tour, let us know at once, so that we may reserve a place for you!

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The International Scene

Fred Odenheimer, Chairman
International Relations Committee

Every month we await with great anticipation the arrival of the *Piano Technicians Journal.* I hope you noticed the "we," because there is no guarantee that I am the one to read the *Journal* first. Mrs. O. is just as eager to see and read it as I am, and so in the interest of equal rights — Dorothea first. Amongst other magazines arriving here monthly is *Das Music-instrument.* I leaf through it to keep *courant* on some international trade news, patents granted or pending — mostly in the electronics field nowadays — and winners of various piano competitions, who seem to come from all over the world, rather than just from a few countries as in the not-too-distant past. A prize of $10,000 given yearly by the organization of German Music Publishers and the Association of Music Dealers to a deserving youth orchestra was awarded this year to an orchestra in Berlin.

Four times a year the *Europiano* magazine arrives. In the latest issue there is an article by Ewald Voegele, "Learning to Tune is Fun." This would catch anybody's eye, and indeed it is a worthwhile article. Perhaps, with permission, the *Journal* can print it sometime in the future. While we do not need to agree with everything written, it is certainly challenging to our thinking.

If you are still wavering about attending the convention in Japan, now is the time to make up your mind. It may be a once-in-a-lifetime opportunity to meet with your peers from other countries, and at the same time to see a good portion of the Far East. Times may be tough, but on the other hand, this opportunity may never recur. For the various programs consult previous issues of the *Journal,* but if you feel that you just cannot go then invest in "Friends of IAPBT" and send your membership contribution of $15.00 to the Home Office.

CHAPTER CONTEST — BE A WINNER!!

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

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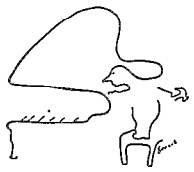

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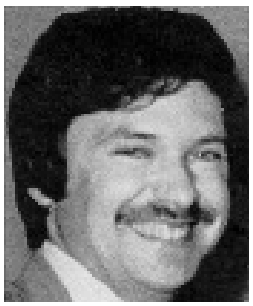

Robert Smit
Northeast Regional Vice President

One of my many functions as Regional Vice President is to attend regional seminars and talk to the registrants about our organization. I get asked a lot of questions about benefits, amount of dues, and entrance requirements. Often people don't feel the need to join because they can go to our seminars and conventions and also subscribe to the *Piano Technicians Journal.*

The thing I tell these people is that without the many members who faithfully pay their dues every year and volunteer their time and energy to make things better for piano technicians everywhere, there would be no *Piano Technicians Journal* and no benefits. I think it would be fair to say that the Piano Technicians Guild needs those people who need the Piano Technicians Guild. By subscribing to the *Journal* and going to conventions and seminars, they indicate that there is a need.

Many of us take for granted the friendships that develop through our chapter meetings or conventions and seminars. This is the fellowship element that I think is one of the most important benefits we realize. This benefit creates a comfortable environment for a meaningful exchange of knowledge and ideas. It is nice to know that we can draw support, confidence and encouragement from our friends in this fine profession. Remember, membership is everybody's business.

Booster Club	Pts.	Mbrs.
ALLEN, Jon	1	1
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BRILEY, James E.	3	1
BROWN, Glenn	1	1
BUYCE, Harold R.	2	2
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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
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GRIFFIN, Rudolph	5	1
GRIFFITH, M. Laverne	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
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HOSTETLER, Robert	1	1
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KINSER, Bill	4	1
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MONROE, Paul	1	1
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NICHOLSON, Steve	1	1
ORR, Ronald	1	1
PENNINGTON, David L.	1	1
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PHILLIPS, Webb	5	1
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1983 Piano Technicians Guild Convention, New Orleans, LA Part II

The New Orleans Hilton and Towers is one of the most beautiful hotels in New Orleans, and it *does* have a swimming pool on the third floor. As you enter the glass-enclosed, nine-story atrium, the rose marble, polished brass, and tropical green plants everywhere create the most elegant atmosphere possible. The hotel has 1200 guest rooms which overlook the Mississippi River, world famous Canal Street, the business district, and the French Quarter.

In the atrium Le Cafe Bromeliad will offer you a delicious array of fine food served buffet style. Friday nights feature a seafood buffet with Cajun fiddlers; Saturday nights, Italian cuisine and arias.

Walk over a few feet and enter the French Garden Bar and enjoy the beverage of your choice. Or how about a dozen fresh oysters on the half-shell with a cold mug of beer?

Also in the atrium is Le Croissant Coffee Shop. Order what you want, from steaming, delicious breakfast to a late-night snack. A wide selection of food is available to suit your taste and the prices are average.

The Rainforest, located at the very top of the hotel, is a good luncheon spot, serving hot po-boys and salads. At night it's a forest with rain beating down into the sounds of disco, thunder, and flashes of lightning. It is a unique spot to visit.

On the third floor is Pete Fountain's club. There is no better New Orleans Jazz than with the King and his band. Pete Fountain has toured the world and now he has settled down at the Hilton in New Orleans in the city where he was born. (Pete still tours, but for a good part of the year he is here performing at his club.)

Now if this all puts a little weight on, right in the hotel is a Tennis and Health Club, with eight indoor and three outdoor tennis courts, eight racquetball courts, saunas, whirlpools, and exercise rooms complete with universal health equipment; for joggers, an outdoor riverview jogging track. If this warms you up a bit, pause for a drink in the Garden Bar overlooking the indoor tennis courts.

Sounds like something you can't miss out on, right? Good! See you in New Orleans in July.

Nolan P. Zeringue
Local host chairman

Auxiliary Exchange

President's Message

Dear Friends and Members of the Auxiliary,

Picture how it will be as we start packing for the trip to New Orleans. As usual, we will leave some extra room for souvenirs. We will take a few nice clothes for the social events. As we make the preparations we will have in mind how nice it will be to get away together, how exciting it will be to see our piano friends from around the country.

As we pull up to the New Orleans Hilton and Towers we will be impressed at its size and elegance. As we enter the atrium lobby and take the escalator to the second floor registration desk we will be reassured to know this hotel will be a very pleasant place to relax and enjoy ourselves for our stay in New Orleans. The technicians will check out the meeting rooms and discover they are some of the best we have ever had: clean, comfortable, and easy to locate. There is an outdoor pool with a whirlpool nearby; a complete health and tennis club is in the building with a jogging track on the roof. In typical Hilton tradition, there are several restaurants in the building ranging from a casual coffee shop to an elegant dining room. When we see the hotel and view the meeting facilities, we will know why the room rates are not rockbottom, and we will also know we are in for a very enjoyable week.

Many technicians do not travel much for business purposes. The national convention is usually the biggest business trip many of us make during the year. We are not in the habit of parting with large sums of money for a hotel room. When we travel we often stay in roadside lodging at minimal cost. This makes the cost of a big, central city hotel with meeting facilities seem quite high. I hope that in your family you will be able to rationalize some of this cost discrepancy, and that you will not let the price of the hotel keep you from attending and enjoying the national convention. Perhaps you would like to consider these thoughts:

1. If we held the convention in a hotel without meeting space we would have to pay much more for the meeting facilities. This would cause the registration fees to jump. This year's convention registration fees are the same as last year.

2. You and the technician work hard all year long. The convention is packed with technical classes and meetings. You certainly have earned the right to treat yourselves to a nice sleeping room in close proximity to the convention activities. If the room costs more than you would allow yourself to spend on a vacation room consider the extra amount something that will be offset by the tax deductions involved because this is a business trip. Other business travelers think nothing of staying in nice hotels. Hilton is *the* business address, they tell us.

3. It is good for one's self image to do things in style sometimes. Granted, people who simply do not have the money should not overspend foolishly. Nevertheless, people who own their businesses and are professional craftsmen with fine reputations should allow themselves to enjoy a little luxury. You would not turn down a boss who suggested you stay at a nice hotel on your business trip, so why deprive yourself; after all, you are the boss.

I will be looking for you in New Orleans. I think you will love it. Remember, we have a full complement of activities planned for the Auxiliary. You are welcome to participate in these activities whether you are a member of the Auxiliary or not. Just sign up for them on the registration form or at the convention after you arrive. The cost is minimal, and it includes a luncheon and many classes and extras. Please plan on it!

See you in New Orleans!
Julie Berry

The Importance of Making Money

A technician friend and I were recently exchanging views on making money. He was ready to re-evaluate his thinking because he had reached a point where he was saying making money was only a secondary goal in his life, but he was acting as if it were the prime motivator. He had recently turned down a job in a super location because, among other things, it required him to live on less money for a while. It bothered him that making money had become so important.

We all need to realize we are required to do a lot of thinking about money in order to keep our businesses afloat, but we do not need to feel apologetic or even overly materialistic because we have money on the mind. If we lived in the workaday world where a paycheck for a fixed sum walked in the door every two weeks we would not have to do as much thinking about money. The funds would flow in and out in a more logical order, and we would be able to predict how much money we would have and how we would be spending it. We would be able to spend less time thinking about money because there would be less planning to do.

However, most of us do not live in the fixed paycheck world. We have times of the year that are usually busy and profitable and other times of the year when the cash flow diminishes. For piano rebuilders or piano retailers, money arrives in larger amounts at less frequent intervals. The timing of these intervals may not always coincide with the timing of accounts payable, and a certain degree of skillful manipulation

may be required.

A financial analyst could sit down with each of us and suggest time-proven ways to set aside a certain amount from each check to cover the income taxes that will eventually need to be paid, and a certain amount from each check to put in a fund to provide cash flow during times when tunings are down and prices are up; but many technicians get so busy working on pianos that they never get around to this type of organized advance planning. Even if they do, it means a lot of time has to be spent thinking about making and spending money.

A technician who rebuilds pianos needs to figure out in detail exactly how much he/she must charge for each part of the rebuilding job. If the work to be done is not properly assessed and costed-out, the technician usually ends up doing the work anyway without being paid. Resentment can build on the part of the spouse who thinks there ought to have been more money involved in that much work and even on the part of the technician towards the customer because the customer got so much work for so little money.

Technicians have to think about money situations that arise in the customer's home. It is easier for them to think through these situations in advance and discuss them with a spouse or a good friend so they will be prepared to handle them without hesitation. A technician needs to know how to approach a customer properly to discuss additional work that might be required. The technician needs to be able to talk about the money involved without either flinching and being apologetic or leaving the impression he/she is trying to give the customer a hard sell.

Sometimes technicians can be talked out of legitimate charges by a customer. If the technician worked for a large company and had company-issued rate sheets, he/she would not be likely to waver about the cost of doing a job. But a self-employed piano technician who gets along well with his/her customers and knows it will only take a minute to turn a screw or glue a jack can all too easily be swayed into doing something for free because a customer is so nice. Though it is perfectly acceptable for a self-employed person to give away his/her services whenever he/she pleases, it is important for the technician to be aware that a choice is involved and that most businesses have devised rate schedules because it is a fair way to do business.

Sometimes technicians who claim they don't really care about the money still get trapped into burning the candle at both ends simply because they try to accommodate everyone who calls. Even here money enters into the picture. A technician needs to realize that money buys the things a person wants from life, including time. People who are not self-employed do not need to picture buying time with money because people don't usually offer to pay them to do things during their free time. A technician who has a chance to work in the evenings needs to consider the price he/she would attach to free time. Is it worth $XX to me to be with my family or to get some sleep or to recreate this evening rather than work? Many times at Christmas my husband technician ends up working more hours than usual; he works on weekends and occasionally in the evenings, two things he tries to avoid during the rest of the year. It is not so much a matter of the extra money involved as it is his reluctance to turn away faithful customers who depend on him. To help ease the burden of extended working hours, we decide that the extra money he gets from these after-hour calls is his Christmas bonus, money to be spent any way he pleases. This keeps us from budgeting that extra money so we don't count on it for living expenses. It eases a bit of the strain of the extra work. And it helps us feel that we are not being trapped by the extra money to be made if he only works a little bit harder.

A tuner who needs more money may be tempted to squeeze in another tuning each day when a better solution might be to raise prices. A person in this situation must sit down and think through the options.

We can each be helpful to the technicians by offering to talk with them about the importance of making money and its relation to the business of piano tuning and repair. We can help distinguish between the financial decisions that the business needs to make and the importance of money in our personal budgeting. We can learn to be less emotional about the money decisions that need to be made on behalf of the business, realizing it does not make one inherently materialistic or greedy to be making a living from work one loves to do. How many hobbyists do you know who are better technicians than the professionals?

You Know You Have Been in New Orleans a Long Time If:

— you pronounce the street name "Burgundy" with the accent on the "gun"
— when someone says they're going to "make groceries," you understand that they're just going shopping.
— you can get on a bus whose front sign says "Cemeteries" and not feel nervous
— you begin to like the color combination of purple, green and yellow
— you are not surprised to find a plastic baby in your cake
— you forget common directions like north and south and simply use "towards the river" or "towards the lake."

A FIRST TASTE OF NEW ORLEANS

New Orleans is really the way you imagine it to be. When you come you'll see a style they just can't copy anywhere else. It comes from having Mississippi River water in your veins for several generations. You'll have to walk slower than you're probably used to, because we just won't hurry here. The streets are sunny, with masses of slow moving people in all shades of color. At night, the sun sets and colors the sky in tropical orange. Palm trees and live oak trees abound. Crickets and cicadas sing continually, and very large magnolia trees offer huge white blossoms — but too high up to pick.

The French and Spanish influence abounds. *Everyone* knows that the common last name of Hebert is pronounced "Ay-Bear." Regular people — not just recent arrivals from France — name their daughters Jeanne (Jahn) and no one mispronounces their name.

One of my favorite rituals is beignets and cafe au lait at the Cafe du Monde. This large, famous coffee shop is roofed but open on three sides to the outdoors. Large fans overhead are reminiscent of "Casablanca." Just a block from the Mississippi River and across the street from Jackson Square and the French Quarter, the place is full of small tables, chairs and people at almost any hour of the day and is especially popular at night. There are only two items on the menu: beignets and coffee (or cafe au lait). Even with this small selection, the clientele does not become bored but continues to pack the place. This is because the beignet (ben yay) is the most delectable pastry you could hope for. I won't describe it, because you will undoubtedly taste it at the convention.

The Cafe du Monde is within walking distance from the Hilton, or a 5 minute taxi ride. Better yet, it is the perfect place to end a visit to the French Quarter. After window shopping at the European quality antique shops on Royal Street, and money shopping at the less expensive places, continue your stroll past the street musicians, stopping if some jazz band catches your fancy or if you are drawn to the cagin' fiddle. At Jackson Square, if you have a spare hour, hire an artist to paint your portrait. Then cross the street for beignets and coffee. Next, walk a block to the Mississippi. If it's getting dark, the riverboats will float like palaces of light.

Beatrice Skelley
President,
New Orleans Auxiliary

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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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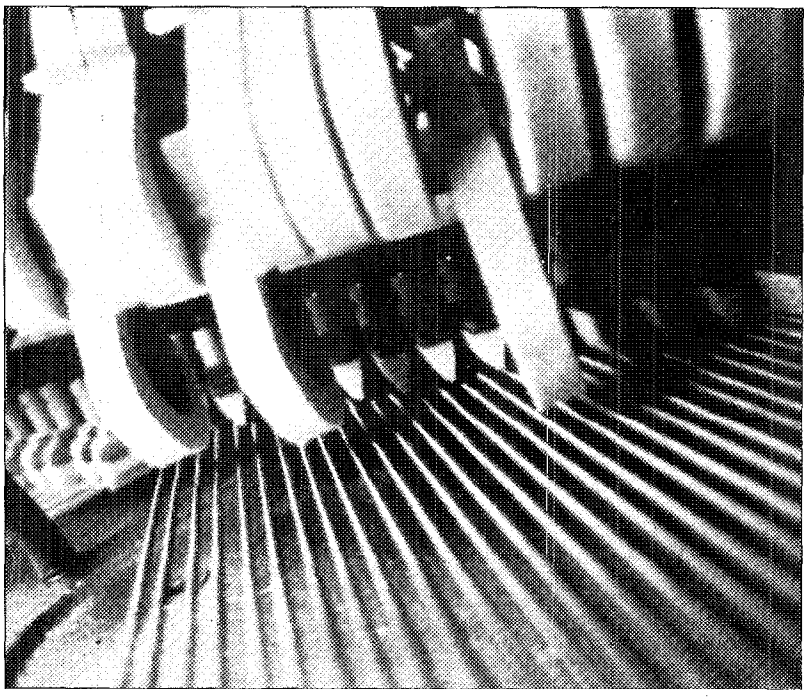

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Our continuing commitment to you, the technician, is apparent in our ongoing willingness to teach and train. Our key technical people attend PTG meetings and conventions and conduct training sessions. Our service department continues its seminars. Our technical staff is at your service to provide any assistance you might need, just call 800/435-2930 toll-free between 8:00 a.m. and 4:30 p.m. For parts call Code-A-Phone 800/435-6954. In Illinois call 815/756-2771.

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Piano Technicians Journal

UPDATE

February 1983

Your 1983 Guild Dues

If you did not receive your annual dues billing by this time, please call the Home Office. We do not want you to be on the delinquency list.

Annual Dues

Annual dues must be paid in one sum. The partial payment method was cancelled by the delegates in council session in 1981.

Please pay the full amount shown on your annual billing.

Chapter Dues

If chapter dues are included in your billing please include that amount in your payment. The Home Office is required to credit the chapter with the amount shown on your billing from the check you send. Therefore, if you do not include chapter dues as marked on your annual billing, we must automatically use part of your payment and credit it to the chapter.

Do not send chapter dues unless an amount is indicated for chapter dues on your annual billing.

The Home Office collects chapter dues only for those chapters which made the arrangements for their dues collection last year.

Membership Cards

Memberhsip cards will be mailed when all dues have been paid. At that time a gold 1983 seal for the engraved certificates will be included with the member cards to all Registered Technicians.

Certificates

The engraved certificates for Registered Technicians have been ordered for new registered technicians through the end of December. These new certificates will be dated 1983.

Gold Seals

A small oval gold seal bearing the year date 1983 will be sent to each Registered Technician whose dues are fully paid. The seal may be placed over the year on the Registered Technician certificate of those with earlier certificate dates. This 1983 seal then shows that the member is in good standing with the Guild this year.

Many Thanks

To all who have paid annual dues promptly.

PTG CALENDAR

January 1 **DUES**	1983 dues are due
February 5 **GOLDEN HAMMER** **MEMBER OF NOTE**	Closing date for receipt of nominations for Golden Hammer Award and Member of Note Award. Send to Willis Snyder, Committee Chairman.
February 15 **AMENDMENTS**	Closing date for receipt of proposed amendments to the Guild Bylaws, Regulations and Codes. Send copy to Ron Berry, Chairman of the Bylaws Committee.
March 5 **GUILD OFFICE**	Closing date for receipt of nominations for Guild office. Send nominations to Ernie Juhn, Committee Chairman.
April 15 **DELEGATES**	Chapters elect delegates and alternates to the 1983 Council session, New Orleans, LA this July. Send completed credentials form to the Home Office by April 15.
April 15 **REPORTS FOR AGENDA BOOKS**	Closing date for receipt at Home Office of Guild officers' and Guild Committees' reports to be included in the Council Agenda Books.

Chapter Notes...

The October meeting of the **Southwest Florida Chapter** started with 11 members and guests enjoying supper at Morrison's. The business meeting began with a report of the State Convention. Next year's will be in Jacksonville. Walter Pearson was elected to be the new State President.

At the Technical Program Walter gave us some very pertinent suggestions on how to develop and increase business. We heard some interesting and new ideas because Walter had asked several Chapter Members to speak giving their own thoughts about this. Sandy brought out that playing the piano after tuning it, and expressing pleasure when playing, makes a good finishing touch. Doug stressed the need for telephone courtesy and giving potential customers information about experience and people who could be referred to. John Phillips spoke about the need to strive for perfection. Your editor suggested establishing an identity to help customers remember us (mine is wearing a bow tie) and taking the extra step to do the job right. Ed stressed that to be successful we have to do quality work for a reasonable price. He also added that it is necessary to keep our names in the Yellow Pages. Arthur pointed out that the tuner should explain the technical side of tuning to the dealer. He fills in for a dealer occasionally on the sales floor. Arthur started tuning, as so many of us have, for a dealer. John Lynch told us that we should know the fine details of our business and how to carry them out properly, and that we should explain to the customer just what work has been done.

Jeanne, our president, finds that Piano Technicians Guild literature is very helpful. She contacts teachers, music clubs and teachers' associations with Piano Technicians Guild pamphlets. She said that she found these much more effective than ads in the newspaper. I have found the same thing. Advertising in the Tampa Tribune simply didn't get the response that a two-line ad in a small neighborhood paper did.

The **Baton Rouge Chapter's** November meeting included an interesting and controversial program on business practices presented by John Blackwell. He stimulated our thinking by explaining his business organization. He employs three Customer Service Representatives part time to contact and represent his customers. Requests for service and complaints are passed on to a full time Service Coordinator, who represents and manages the piano technician.

Some of his tips on dealing with customers most professionally and profitably included insulating yourself from negativism, which always damages you, by training the Customer Service Representative to be positive about you and your competence while agreeing with the customer, and training the Service Coordinator to evaluate and resolve or pass on to you any complaints. Also, do not use a set formula for determining when to get pianos tuned, but emphasize that each piano should be tuned when it needs it. For professional use, this may be daily. Promise a trouble-free, performance-ready piano but give no guarantees on how it may hold up under actual use.

He cautioned us against becoming pawns of the music industry, which expects top quality service at a cheap price. He emphasized that the goal of business is financial return, and that to maximize this the technician needs to establish a LINE OF CREDIT, learn to use SMALL CLAIMS COURT when customers fail to pay on a promissory note, rent time on a BIG FRAME COMPUTER, find and expand the most profitable area of your business by CATEGORIZING where your business is coming from.

Michael Mattison,
Chapter Secretary

Sixteen members and four guests of the **Suffolk, L.I. Chapter** met on November 17, 1982. An interesting meeting was in store for all.

Since the Nassau, L.I. Chapter has the equipment for the tuning test, they have agreed to share the use and upkeep of the machinery with the Suffolk Chapter, making it unnecessary for us to purchase this expensive equipment. Jim Maguire, Suffolk Chapter secretary, has agreed to supply a quality grand piano for testing applicants.

We were privileged to have Wally Brooks and his wife Vivian from the Connecticut Chapter as our guests. Wally presented a technical session on the subject of custom hammer boring with a newly designed boring jig that works with 100% accuracy. This is his own invention and is a great asset to the technicians who want to do their own boring.

Plans are being made by David Tabachnick, Technical Director of the Suffolk Chapter, for a visit to Steinway Hall at 57th St. in New York City. We will be viewing how concert pianos are prepared and tuned for the performance. We are all looking forward to this special treat early next year.

All the above information clearly displays how well three nearby chapters can have an interchange of thoughts and information to make us all better technicians.

Sam Schorr

The guest speaker of the **Connecticut Chapter's** October meeting was Harwood B. "Woody" Comstock, President of Pratt, Read Company. It was a pleasure to have him with us. He assured us of Pratt, Read's continued support of our chapter. We are indeed fortunate to have such a benefactor.

Woody told of the massive job of cleaning up and restoring following the June 6 flood. Following Woody's talk, Frank Stopa showed us the many slides he had taken showing the damage to Pratt, Read and the Town of Ivoryton. (Thanks, Frank.) Absolutely everything that was salvageable needed complete overhauling. All the machinery needed to be stripped down and rebuilt. Given these conditions, Woody said, there are no "sealed" bearings! As of October 20, the plant was approximately 85% operational. Many new, more efficient systems have replaced antiquated ones that were destroyed. The new dust-handling operation has proved most effective.

Woody enthusiastically reported on the recent acquisition of the Sohmer operation. They will be striving to maintain the quality set by Harry and Bob Sohmer. In fact, the Sohmers will inspect each instrument before it leaves the plant. A tentative goal of December 1 has been set for normal production flow of 2 or 3 pianos per day; final production of 10 or 12 per day by February 1. Frank Stopa will receive the first instrument manufactured at the Ivoryton plant!

Most appropriate, as Frank has been deeply involved in the move and change of operations from New York to Connecticut.

At a time when the industry is at an all time low — the United States is down to about 10 piano builders, while there were 300 pre-1929; production was down to 140,000 units a few years ago; Aeolian/Rochester, builder of Chickering, Knabe, Mason Hamlin stopped production in progress this past summer; Currier has closed their doors; Wurlitzer has greatly reduced production — Pratt, Read Sohmer will have their work cut out for them! However, with continued quality and the enthusiastic cohesive effort that they are showing, they will be able not only to survive, but go forward, strengthen the industry, and come out on top.

Thanks, Woody, for taking time out of your busy schedule to speak to us. (Incidentally, Woody has become a dad for the first time with the birth of a son, Brooks, this past summer. Congratulations!

Vivian Brooks, editor

The November technical session of the **Syracuse Chapter** was a success. The chapter presented a fine technical program through the marvels of telephonics by the Baldwin Piano Company's service technicians, Jack Krefting and Willard Sims. Slides to illustrate the procedure followed by Baldwin in regulating a grand piano were shown and coordinated with a duplicate set at the Baldwin headquarters in Cincinnati. Talk-back equipment provided an opportunity to ask questions directly. Our thanks go out to **Tringali Piano & Organ** for hosting our meeting and technical program.

William J. Moonan, Editor

The second offering of the **Los Angeles Chapter** as a Christmas gift for the Salvation Army was received and our total was about $112. Two men became STUDENT members: Stan Albreght and Gerald Niederdeppe. In the late 1920s, it was announced, we had over 300 piano manufacturers; now we have 12. Only one company in the U.S. makes metal parts for actions such as brackets, screws, and about all other metal parts for actions. (What would happen to us if they should burn down?)

Our Technical Session was given by Russ Upham and his daughter, from the San Diego Chapter, on the subject of touch-up case work. It was so comprehensive we can only touch upon it here . . .

To remove polish or wax buildup or fingerprints, use TSP or Spic & Span in water, then wash surfaces and wipe. A quick way to make an old finish look better is to sandpaper it and use Deft applied with a brush. To prevent fish eyes use a few drops of Smoothie in Deft or lacquer. To remove old finish spread nonflammable remover on it; when finished, spread on a second coat, then let dry 20 minutes and scrape it off with a 3" scraper, or burlap rags. If it won't all come off then do it over two or three times, but always use two coats of remover in combination. To bleach a piano, use chlorox or other household bleach on a rag only (NEVER brush it on). Sanding must be done first. (Wear cloth lined rubber gloves.) DO NOT LET IT DRIP, for it will always show. To stop bleaching process (even after finishing), use white vinegar over the bleach. For open pore finish use one coat lacquer sealer and then only one coat of lacquer. For satin finish on open pore, use Miniwax on steel wool and rub lightly with the grain. To avoid open pore, use paste wood filler, rub in all directions, and wipe off the excess. To blend colors use Standard Tone finish in spray can. On polyester finish, fill nick or hole with boat resin and overfill it. Next day use razor blade with back motion to even off, then finish with high gloss polish. When putting on a decal use an amalgamator over the letters, then place properly within preset masking tapes. Rub finger or the back of a spoon over it until it is hot, then wet the paper and peel it off. Add another coat of finish over decal area or whole surface.

Thank you, Russ, for another great evening of learning.

Harry Berg

*OUR NEW ADDRESS * * **

The Home Office is now located at 1515 Dexter Avenue North, Seattle, Washington 98109. Same telephone number (206) 283-7440. You may also call on (206) 282-1991. Office hours are 9 a.m. — 5 p.m. Monday through Friday.

COMMITTEE CHANGE

Clayton Harmon of Asheville, North Carolina, has accepted appointment to the Public Relations Committee.

Special Notice To Convention Members

NEW FLAT ROOM RATE

We have successfully negotiated the Hilton Hotel in New Orleans down to a flat rate for rooms amounting to $70 per night. Rates were accepted some three years ago (in a different economy) for $70 to $90. Experience tells us that the cheaper rooms go very rapidly since there are few available, so most members wind up paying for the upper level price. This year all members pay the same, single or double. Rooms for the past two years were $70 to $90 but few ever saw the seventy dollar rates. The trend in high room rates simply follows the trend in high everything else. While the economy has slowed down slightly we still see a steady rise in most things having to do with a convention.

LOWER REGISTRATION

In order to help keep costs down we have lowered the registration rates this year and there will be no registration fee for children under sixteen.

FUN AND OUTSTANDING FACILITIES

We are doing everything so that as many members as possible can attend this year's convention. The local Host committee has some great plans and New Orleans is a colorful and exciting city. The Hotel has outstanding facilities. Swimming pool, tennis courts, racketball courts, it is only a very short walk from the French Quarter, and there is plenty of public space with first class facilities.

YOU MAKE THE DIFFERENCE

It was competitive with the other hotels checked at the time of selection but we cannot guarantee the other hotels will not try to underprice us later. *Remember* this hotel has held space for us for over two years, they are providing us with thousands of dollars worth of class room and meeting space *free,* and they are doing everything possible to make your stay a pleasant one. WE OWE IT TO THE HOTEL TO STAY IN THEIR FACILITIES. We owe it to the Guild, too. Badges will be marked this year for those staying in our headquarters hotel and special privileges will be afforded those who help us support our classroom and meeting space. Meeting our guaranteed room pick-up is most important to the Guild. Failing to do so can cost the Guild thousands of dollars which will in turn affect our general budget and services to all members. *So,* stay in the hotel, please. The money you might save will be negligible and it could cost us all in the long run.

Concert Almost Dampened

From Democrat News Services

When pianist Roger Williams was scheduled to perform in Port Arthur, Texas, last summer, he may have been feeling a little damp from the humidity of the region, but he probably didn't anticipate having damp felt nearly cancel his show.

Williams' concert for the Kiwanis Cub of Port Arthur was the first Kiwanis-sponsored concert of the season and the club's piano was taken out of storage just hours before the show.

Williams and his piano tuner arrived for tuning and sound-check, only to find that extreme dampness had gotten into the felt of the piano's hammers while in storage and all of the keys were stuck.

The Kiwanis Club wives came to the rescue with a brilliant idea.

"The piano lid was removed and about 20 ladies, armed with hand-held hair dryers, stood around the piano for two hours, individually drying the felt on each hammer," Williams said. "It was quite a sight."

The show went on as scheduled.

Thanks to Journal subscriber
Robert McAdory
Benton, Arkansas

JOURNAL BINDERS

A useful hint on using your *Journal* binders:

It is difficult to get all of the twelve issues into the *Journal* binders, particularly the extra large size of the annual membership roster. I have found a way to make it easier.

I modified the part of the binder that holds the metal rods so that all twelve issues can fit easily. The present slot has five small sections, each of which can take two rods centered in two *Journal* issues. Cut out the metal divisions in the slot to make it a continuous slot instead of five separate spaces and the resulting wide space easily takes all six of the rods in the package and all twelve *Journal* issues.

Leon Graviet, RTT