Piano Technicians Journal

December 1987

The Baldwin Piano...

You can see why it sounds better

Baldwin grand piano standards are set in the ultimate testing laboratory, the concert stage, by the final judges of piano performance, the artists who can afford to consider nothing less than the finest.

We pay particular attention to the comments of our artist pianists. The constant critical evaluation of these artists, some of the country's most distinguished pianists, contributes substantially to piano design.

One unique way in which we utilize our artists is in the tone tests that we regularly schedule. This important "behind-the-scenes" activity plays a major role in maintaining and improving the quality of the Baldwin concert grand, and ultimately, other pianos in our line.

The highly respected artists who participate in these tone tests provide constructive input both tonally and functionally on Baldwin concert grand pianos. The visiting artist compares tone test pianos on the relative desirability not just of tone, but also of various elements such as touch, repetition, and level of sound. Pianos typically used in tone tests include production models, prototypes, pianos representing a previously established standard, and competitive instruments. Baldwin staff members from research and engineering, manufacturing, merchandising, and top management participate to hear first-hand the artist's evaluation.

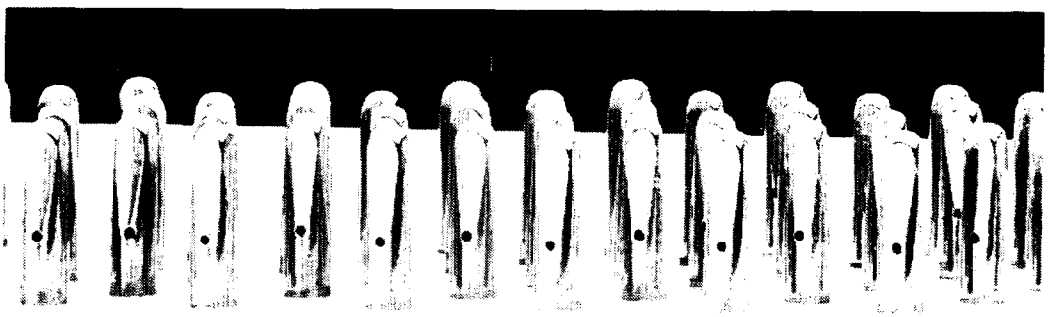
In addition to analysis of potential refinements in piano design, tone tests help establish tonal standards for pianos in current production. To insure tonal consistency from piano to piano, we have a tonal standard piano at our factory for every size of grand we make. A tonal standard instrument is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

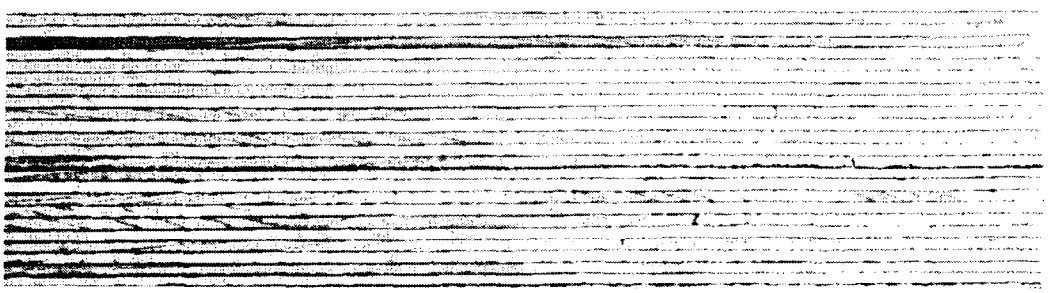
Seventh in a series of informative ads on piano tone published by Baldwin exclusively for the benefit of piano technicians.

Baldwin. – *Leading the way through research*

Delignit®

Multi-laminated beech pin block material





At long last Schaff has obtained a distributorship for the German made, multi-laminated beech pin block material called DELIGNIT®. For several years now this type of pin block has been imported into the United States and Canada. Now this particular DELIGNIT® grade, having the same characteristics of density as used by almost all European piano manufacturers, is available at Schaff.

As the above picture of a typical 1⅜" DELIGNIT® pin block shows, there are approximately 21 cross laminated plys of high quality beech veneers that are compressed together with a modified hot curing phenolic resin applied in a special dry-bonding process. A full panel pin block measures 48" wide x 59" long with a double block being 19" wide and a single block measuring 9½". All of the various width blocks come in either 1¼", 1⅜" or 1½" thickness.

Single and double blocks can be shipped UPS, but a full panel must ship via truck. Write or call for pricing information.

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The Piano Technicians Journal **December 1987**

Official Publication Of The Piano Technicians Guild, Inc.

Volume 30
Number 12

IN THIS ISSUE...

PLUS...

THE COVER...

A photo study by Technical Editor Susan Graham. Season's greetings to you and yours from the staff of the Piano Technicians Journal.

The Piano Technicians Journal (ISSN 0031 9562) is the official publication of The Piano Technicians Guild, Inc., 9140 Ward Parkway, Kansas City, MO 64114. The Journal is published monthly, with two issues in December. Second class postage paid at Kansas City, MO., US ISSN 0031 9562 foreign and domestic. POSTMASTER: send address changes to: Piano Technicians Journal, 9140 Ward Parkway, Kansas City, MO 64114.

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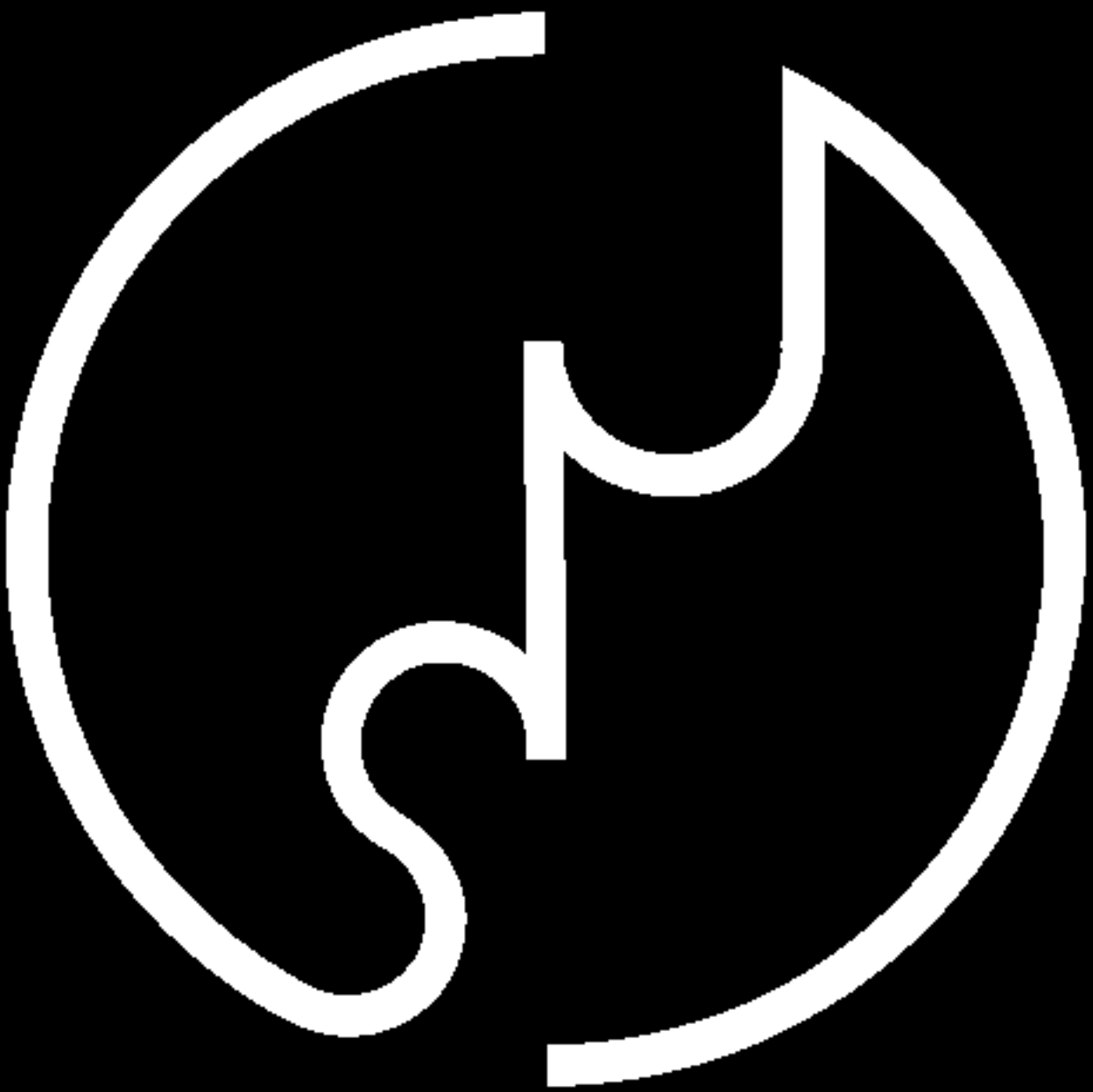

Young Chang. The only Korean piano to meet Japan's highest standards.

The Japanese Industrial Standards seal.

It guarantees a piano is created of the finest materials in the world. It promises quality construction and careful attention to detail. It assures a long lifetime of exceptional performance and remarkable tone.

And Young Chang is the *only* Korean piano to earn its approval.

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At Young Chang, we're dedicated to creating instruments of outstanding quality and extraordinary beauty. It's a commitment to produce instruments nothing short of remarkable. Instruments that approach perfection.

For a free copy of our Service Guide and Technical Specifications Manual, write to Young Chang Technical Services, 13336 Alondra Blvd., Cerritos, CA 90701. Or call 213/926-3200.

YOUNG CHANG

The best the world has to offer.

President's Message

M.B. Hawkins
President

A Feeling To Carry Throughout The Year

This is traditionally the time of year when just about everyone finds time to think about peace and goodwill among men. It is perhaps unfortunate that for some it may only become a large enough item for emphasis during this season of the year. On the other hand, it is indeed very fortunate that there is at least this one time during the year when the world focuses on a warm feeling among people, a focus on not being at war but looking at that common spark which exists within everyone.

As I continue to be in communication with not only chapters but individuals across our membership, the understanding is constantly reinforced that this organization is indeed unique. Unique in a way I wish I could successfully communicate to our complete membership that collectively we possess a togetherness not often seen within any group. That being the case, allow me to say to you during this very special time of the year to spend some time contemplating on how the feeling in the air this season can be continued on a daily basis into the future. To the degree we are able to capture what has just been said, we will be able to contribute to a greater degree to our chapter and the organization as a whole.

Although our increased awareness on a daily basis will contribute and help chapter and organizational sensitivity, I believe our sensitivity to our clients will improve also. Remember to bring yourself back to the attitude that generally prevails during this season of the year. I am not talking about the callousness so often seen when driving and walking in shopping centers, which seems to be centered on self. Rather, try to identify with the larger picture. The larger picture focuses on that central thought of peace on earth and goodwill towards all men. Yes, if we keep our focus there on a daily basis throughout the year, no doubt our relations within our immediate family, our chapter and organization, and our clients, as well as all people with whom we come into contact will improve. Why? Because operating from this perspective we will individually grow and become a more harmonious human being.

Speaking for the Board of Directors and Home Office staff as well, we wish you the best during this holiday season. May the festive spirit warm you and contribute to your well-being.■

Tech Gazette

Yamaha Piano Service December, 1987

Parts, Etc.

A BETTER MOUSETRAP

We have always heard that if you could build a better mousetrap that people would beat a path to your door. We don't really have a better mousetrap; however, we think we have a better capstan wrench. It is so much better that we're betting that you will be able to throw away (or give away) the other three or four you own that never really worked.

This square shoulder capstan wrench is designed so that the "wrench" end of the tool is the proper height to turn the capstan screw when the base of the tool is resting on the keys. The "handle" end of the tool is offset from the base at the proper angle for clearance and ease of use.

The wrench is made of high quality tool steel with a black enamel finish. Available through our parts department at a price of $6.80, this is a tool that really works. (Our apologies to Ralph Waldo Emerson.)

Yamaha in the News

CONCERT & ARTIST PROGRAM

The Yamaha Piano Division has announced that 1987, the Centennial year for Yamaha, will also be the inaugural year of a formal Concert and Artist Program for the United States.

The CFIII Concert Grand Piano has gained a significant place in professional concert service during the past few years and will be the vanguard of the program. The C7E Conservatory grands will also play an important role.

These instruments are currently being distributed to dealers in larger markets and will form a national pool of pianos, known as the Concert Reserve. These pianos, as well as technical support for them, will be made available to selected artists and events. The Concert Reserve will continue to expand over the next few years.

Personnel Profiles

BESS MAKI

Who is the person with the kind, pleasant voice you usually reach when calling us in Piano Service? That voice belongs to Bess Maki, Senior Secretary, Piano Service.

Bess was born and raised on the island of Hawaii, then left for the mainland to attend college. After one year she met and married her husband, Tsuneto. Bess began her tenure with Yamaha in the Personnel Department in 1973. Because of her excellent "people skills" and her interest in the piano, Bess transferred to Piano Service in 1977.

During her 14 years with Yamaha, Bess has raised two children, learned to ski, and has continued to enjoy playing the piano. Bess and her family reside in Cypress, California.

MIDI Corner

Although the Yamaha MIDI Grand Piano has only recently become available to dealers, several well-known artists have had the opportunity to work with this exciting new instrument. World-renowned artist and producer **Quincy Jones**, after working with the MIDI Grand, had this to say about the product:

"... Most of you are aware of the vast growth of professional quality digital keyboard instruments in the past few years. Despite this, the conventional acoustic piano, which has fundamentally changed very little during the past century, has always occupied a special and solid place in my music. The Yamaha MIDI Grand is undoubtedly the most important development concerning acoustic pianos for a very long time, and is on the current frontier of the evolutionary development of MIDI applications.

"No longer can lines be drawn which clearly separate acoustic and electronic keyboards, nor is it any longer a question of whether electronics will replace the traditional piano.

"Ironically, these sophisticated digital functions will ensure the professional future of the piano—other digital keyboards will *complement* the Yamaha MIDI Grand, not compete with it.

"The MIDI Grand is already an integral part of my work, and you'll hear Yamaha's first one in the Michael Jackson album "*BAD*" which I produced.

"Speaking for my end of the music business, I can tell you that this instrument is a major development for the artists and has a bright future as a mainstay on the stage and in the recording studio..."

Calendar of Coming Events

January 15-17:	Winter NAMM Anaheim, CA
February 12-14:	California State Torrance, CA
March 11-13:	S. Central Regional Fayetteville, AR
April 8-10:	New Eng. Regional Newport, RI
April 15-17:	Pennsylvania State Altoona, PA
April 29 & 30, May 1:	Michigan State Livonia, MI
July 18-22:	31st Nat'l. Conv. St. Louis, MO

YAMAHA

From The Home Office

Larry Goldsmith
Executive Director

A New Era For The Journal

The strength of the Guild has always been in its members. Even though I have been involved with the organization for only a short four years, I know this to be true because of the many good examples I've seen during that time. So many people have been willing to give of their time and energy, not to mention financial resources, without expectation of thanks, much less profit.

One of the best examples is our outgoing Technical Editor, Jack Krefting. Jack has been in one of the most difficult positions imaginable for the past nine years. To be a technical editor requires that you put yourself in a position where criticism, second-guessing and constant review are the normal fare, and thank-yous are hard to come by. It requires encyclopedic knowledge, an even temper, the judgement of Solomon and a wide range of contacts who can also be persuaded to make a contribution.

In some ways, this is perhaps as it should be. If the sharing of the body of knowledge that makes up the piano technicians profession were easy, there would be no need for the Guild itself. A job like this should require an exceptional person.

Still, having known Jack as a co-worker on the *Journal* and as a personal friend, and knowing something of his predecessors, it seems that the Guild has always been extremely lucky in its choices over the years. Jack has been great to work with – hardworking, uncomplaining and prompt with deadlines – and I am sure his contributions to the *Journal* will be missed.

This issue, then, marks the beginning of a transition period within the *Journal*. Susan Graham, our new technical editor, begins her tenure this month. Like Jack, Yat-Lam Hong, Don Galt and all the other technical editors before, she will make her mark on the magazine. With proven skills as an author and instructor, she is off to a very professional start with her column in this issue.

A publication like the *Journal* is very nearly a living thing. Change is constant and necessary; otherwise, it would not be able to serve the changing needs of its readers. It must arrive slowly sometimes to avoid losing the good while improving the bad, but it always comes.

With the support, questions and comments of her readers, and possibly even an occasional word of thanks, Susan will be as successful as her illustrious predecessors.

* * *

We do say thank you occasionally, and when it comes to the individual who wins the Golden Hammer Award, we generally do it pretty well. However, with all the nice things that were said about this year's winner, LaRoy Edwards, a few pertinent items were omitted. Perhaps, given the long list of LaRoy's accomplishments, no one missed a few minor details, like his having been a charter member of the Guild and serving on its Board Of Directors as Recording Secretary in 1965-66. He also held most of the offices in the Los Angeles Chapter at one time or another, was a co-founder of the Pomona Valley Chapter and also helped found the Orange County Chapter. He was also one of the organizers of the International Association of Piano Builders and Technicians and served as its president in 1983-84. Our apologies to LaRoy and thanks to Dick Bittinger for setting the record straight. ■

At Kawai, the tuner's hands and ears alone can determine the final "rightness" of a piano in the final tuning process.

KAWAI
The Master Builder.

See You In St. Louis

Ernie Juhn
Technical Institute
Director 1988

One More Experience Will Make You Wiser And Better

If you are like me, you will always keep on learning. I know that I am not alone. Time and time again, I see some of our finest instructors sitting in classes and continuing to learn whenever they have a chance.

No matter how experienced you are, one more experience will make you wiser and better. With that in mind, everyone should be looking forward to the Technical Institute at the 1988 convention in St. Louis.

Learn how to deal with broken legs, scratched pianos, pianos that need fixing, tuning or regulating and how to do all that efficiently and better. Learn about concert technicians and the latest about electronics in the piano world. Learn about soundboards and how to install them, downbearing and voicing, bushings and center pins and more.

Sounds interesting? You bet.

Be sure to read specifics about "the return of Chris Robinson and Norman Neblett" teaching entirely new subjects. Read about concert grands and spinets in next month's issue.■

Economic Affairs

David Barr
Economic Affairs Committee

Organizing A Piano Service Business

I am going to work around a group of six basic questions. These are questions which can help to focus a business at just about any point in its development. They are:

1. Do I want to be self-employed?
2. What kind of work do I want to do?
3. What drives me the most?
4. How much do I want to work?
5. How much do I want to earn?
6. What things do I have to do?

The answers to these questions should help to define things like career goals, areas of specialization, self-motivation, time management, financial goals, and business necessities. These are the six general areas I plan to touch on in this article.

Let's start with the first fundamental question. Do I really want to be self-employed? Let us assume for the sake of simplicity that the decision has already been made to work in the piano service industry. There are numerous alternatives to self-employment. Many dealers hire and maintain their own service staffs as do many colleges and larger secondary education systems. Some of the larger rebuilding shops hire skilled help as do all of the manufacturers. One sure way to determine a realistic answer to the question asked involves some very careful self-examination. This may also apply to someone who has been self-employed a long time and is now considering going out on their own. It is important to know up front that self-employment has its own set of rewards, but it also has many drawbacks, especially if you are unprepared to meet them. Self-employment tests you against yourself. It will find your inner weaknesses and magnify them. It, of course, also magnifies your strengths.

Thanks, then, to this built in quirk in the system of working for yourself, you need to examine your level of determination as will as your ability to bounce back, pick up the pieces, and go on. These are very important survival instincts that are stronger in some people than in others.

This leads to the next question. What motivates each of us? There are several major theories of personality types which are popular today that help to shed some light in this area. I'll start with a theory by MacGregor. Basically, he belives that we can all be divided into two basic personality groups which he labels type X and type Y. An X person is characterized as someone who is inherently lazy, who will avoid work if at all possible. Because of this inherent distaste for work, this person must be forced to work, controlled and directed at work. This type of person does not want responsibilty. A Y person, on the other hand, expends effort naturally and enjoys working. They work in order to accomplishself-esteem. They normally have a high degree of imagination, creativity, and ingenuity. This type of person is normally easily motivated. Without a great deal of examination, it should be obvious that an X type of person is not particularly well suited for self-employment. Equally, a Y type of person is a poor candidate for a restrictive employment situation.

Maslowe has a more complex system of evaluating what he would call basic human needs. These, of course, are the primary elements of what motivates us all. His famous diagram is called Maslowe's Triangle. It looks something like this:

Percent who have achieved:		description:
10%	Self-actualization	Self-fulfillment
40%	Esteem	Self-worth, recognition, achievement, power
50%	Love / affection	Sense of belonging, acceptance
70%	Safety / security	Health, financial
85%	Basic needs	Food, clothing, shelter

Maslowe believes that all people strive for something called self actualization, which is something like complete self-satisfaction and self-fulfillment, yet only about 10 percent of the people in this country ever really accomplish this pinnacle. About 40 percent of us achieve a sense of esteem, or self-worth, recognition, or power. About half of us have found a level of love and affection. 70 percent of us feel reasonably secure and 85 percent of us have filled our basic needs of food, shelter, and clothing.

At any given point in our lives, some event can easily shift our level of existence to something more basic, or something higher. For instance, a change in health can challenge our sense of security. A problem at work can affect our sense of esteem. A special award given to us by our peers can raise our sense of self-esteem and perhaps let us feel fulfilled in our work. Since changing conditions can affect our actual motivating forces so strongly, perhaps it would be wise to foster a strong sense of being motivated at each of Maslowe's levels. For instance, we might want a better house, we might want to set aside a college fund, we might even want to develop a higher profile within the Guild, we might even want to hold an office at a regional or international level, and we might be fortunate enough to be considered one of the best in our profession in our geographic area.

Several major psychologists have noted that the two strongest motivating forces are fear and desire. When I relate these two driving forces to the idea of self-employment, I come up with a fear of not having what I might need on one side and the desire to have everything I want on the other. This sort of minimum/maximum way of looking at things gives us a way to examine our progress as each of our businesses develop. Let me illustrate with a not-too-far-fetched scenario:

Needs	**Wants**
food	a little
shelter	extra for
clothing	some fun
transportation	

John Q. has just graduated from one of the better piano technology courses. He is about 20 years old. He has good fundamental skills, but needs experience. He has been able to purchase an older van for transportation. He wants a job because he needs a job. He seems to enjoy piano servicing, so he is reasonably well motivated. His financial needs are as follows:

1. food and clothing	$200.00 per month
2. transportation	$250.00
3. shelter	$125.00
Total	$575.00

John Q. would like to make about $1,000.00 a month so he can have a little fun. He finds a dealer who will give him a chance at $900.00 a month. This requires him to work five-and-one-half days a week with only one paid week off annually for vacation. John Q. accepts.

Six months later, John Q. requests a raise to $1100.00 a month. This comes about since John Q. had seriously underestimated (or forgotten about) taxes. John Q. would like to move to a decent apartment and he isn't having much fun. He decides to tune a few pianos on the side as well. John Q. wants more out of life.

Needs	**Wants**
better food	time and
better shelter	money to
better clothing	have some
some fun	fun
transportation	
phone	

John Q. gets a phone installed in his room. He runs an inexpensive ad in the local newspaper with directions to call in the evening. He sets his price below the prevailing rate to insure some business. It isn't long before he is making an extra $50.00 a week tuning pianos in evenings during the week.

1. food and clothing	$225.00
2. shelter	$125.00
3. transportation	$275.00
4. phone	$25.00
5. advertising	$25.00
Total	$675.00

Income: $1300.00; expenses: $675.00; taxes: $275.00; Left over: $475.00 per month

It doesn't take long for John Q. to figure out that if he tuned 20 pianos a week for himself, he could make a lot more money, so, after moving to an apartment for $250.00 a month, he asks a friend what he really should do to set up a business. He gets the following information:

1. Get a business phone with Yellow Pages ad.
2. Get a business bank account using business name.
3. Set up a bookkeeping system based on IRS allowable deductible expenses.
4. Register with federal, state, and local tax agencies, including sales or service tax agencies if they apply.
5. Set up a customer record and recall system.
6. Buy an answering machine.
7. Get business cards printed.
8. Find a good psychologist (only joking).

Since this seems like an awful lot to accomplish in a short time, John Q. decides to work into it over a period of time. He immediately does points 1,5,6, and 7, which are the easiest to do, and, for the time being, skips the rest. This all works out fine until a disgruntled competing tuner down the road threatens to turn John Q. in to the local tax folks if he doesn't come above board. Reluctantly, he lets all the proper tax people know he is in business. Taxes seem to him like someone taking his money for no good reason, and keeping records is like a waste of time. As long as the money keeps coming in, he would rather not bother.

Within 18 months, John Q. is fully self-employed making more money than he thought he ever would. His income at this point far exceeds his actual needs, and even his current wants. He is reasonably happy and successful beyond his dreams. Perhaps he is self-actualized?

Ten years later, John Q. is married, has two children, a home with a mortgage, and bills beyond

his wildest dreams. His needs are far greater and his wants seem far away. He now charges $50 per tuning and has a large clientele list. He is able to book about 35 solid weeks worth of actual paying work in an average year, plus do all his own bookkeeping and phoning. He takes a one-week vacation with his family every summer, and attends the international and regional conventions every year. He is an RTT and very active in his local chapter.

1. Income	$35,000
2. Mortgage	$ 9,600
3. Taxes	$ 5,100
4. Car payments	$ 6,000
5. Health plan	$ 2,800
6. Loan payments	$ 1,400
7. Telephone	$ 1,200
8. Utilities	$ 1,400
9. Vacation & Convention	$ 1,500
10. Food & Clothing	$ 2,800
Balance Remaining	$ 3,200

Most of that balance is eaten up in miscellaneous expenses every year. John Q. walks a tight rope worrying about his security most of the time. It's pretty hard to feel self-fulfilled when basic security is a nagging problem. Frustration continually robs him of energy he needs to focus into his business. At times he seems almost lethargic.

The need to change has finally become apparent. The time has come to manage the business. Managing requires studied business decisions. It requires time management. It requires decisions of effectiveness and profitability.

John Q.'s study of his own business revealed the following information:

1. Actual tunings per year	650
2. Tuning income ($45 average)	$29,250
3. In-home repairs	$3,750
4. Larger shop repairs	$2,000
5. Total tuning weeks at 20 pianos per week	32.5
6. Total repair weeks at $50 per hour/40 hours per week	2
7. Total shop time (recorded)	4.5
8. Total income-producing weeks per year	39
9. Phoning time (6 hours/week x 48 weeks)	288 hours/7.2 weeks
10. Paperwork time (including taxes)	100 hours/2.5 weeks
11. Time spent at conventions	1.5 weeks
12. Total time	50.2 weeks

With one week vacation, John Q. has only .8 weeks time to spare per year. John Q. is also spending almost 10 weeks time per year doing office work. His profitability in the shop doing larger jobs is less than 40 percent of what it is for smaller jobs in the home or at the shop bench.

John Q. writes out this idea for himself:

1. Tunings per year	800
2. Tuning income per year (800 x $45)	$36,000
3. Tuning time per year	40 weeks
4. Repairs income per year	$4,000
5. Repairs time per year	3 weeks
6. Hire secretary for phoning ($5/hour x 300 hours)	$1,500
7. Pay secreatry for bookkeeping ($5/hour x 100 hours)	$500
8. Pay tax accountant to do taxes	$250
9. Time to go to convention	2 weeks
10. Total time	45 weeks
11. Total income	$37,750

John eliminated his least profitable area of income and replaced it with his most profitable and reliable area of income. He also stopped doing chores that he was doing for much less than he could command while he was out working. Based on working a full eight hours in a day and doing four pianos at $50 each, if that were divided into a per-hour income, that tuner is worth $25 per hour rather than sitting in the office himself unable to make any income. John Q. is once again going to be self-fulfilled, at least until he figures out how to spend his additional income and free time.

John Q. also learned during the next year, once a bookkeeper and accountant took over his books, how very valuable the information can be if the records are kept correctly and accurately. He now had a tool to help manage his business instead of an enemy that someone else was forcing him to work with. He learned he could make about $3,000 more per year with about six weeks more spare time by some studied changes. He also learned through his accountant how to use his pre-tax money wiser. For instance, if he ended up in a 21 percent tax bracket after deductions, and he had to pay 12 percent of his business net income to Social Security, and he has state income taxes of about two percent, his total tax bite will be about 35 percent. Now if John buys or leases a new vehicle for his business, he can afford to buy a much better vehicle with pre-tax money. In fact, that pre-tax money is worth 35 percent more to John Q. than his after-tax money. His convention expenses come out of money that is worth 35 percent more. Once the system is fully in place and the tuning list begins to overflow, John can raise his prices to increase his income. A $5 increase in tuning rates can translate to a $4,000 increase in gross income. I'm going to leave my fictitious John Q. now. I hope I've given some of you food for thought. I have used hypothetical figures here. I tried to make them realistic, realizing that there is a wide range of fees for tuning a piano. Many people are making the kind of income figures I have used, and some even more. Ask yourself those six questions I posed in the beginning of this article:

1. Do I want to be self-employed?
2. What kind of work do I want to do?
3. What drives me the most?
4. How much do I want to work?
5. How much do I want to earn?
6. What things do I have to do?

The answers should help you to focus in on the solutions your business might be looking for right now. The members of the Economic Affairs Committee want to wish a most profitable and happy holidays to all the members of the Piano Technicians Guild and the many other readers of this *Journal.*■

Industry News

Young Chang Sells Weber

The Young Chang Piano Co., Seoul, Korea, announced the sale of its Weber Piano Division to the Samsung Co., also headquartered in Seoul.

The Samsung Co. is one of Korea's largest trading companies. Its world-wide distribution strength is expected to be a major asset in the marketing of the Weber brand, according to S.E. Nam, Young Chang President. Young Chang acquired Weber in September 1986.

"Young Chang has enjoyed a close relationship with Samsung for many years. Therefore, the revitalization of the Weber brand and subsequent sale of the Weber Piano Co. to Samsung will expedite worldwide piano sales and is a natural extension of our strategy for steady, healthy growth."

The transition of Weber from Young Chang to Samsung became effective Oct. 1, 1987. The current Weber marketing and sales team, headed by Robert Laube, will ultimately be headquartered at Samsung America's facilities in Fort Lee, NJ.

Letters

Thank you all very much for the beautiful plaque and resolutions recently received in appreciation of the service rendered piano technicians by John W. Travis and Erroll P. Crowl, John being the past and last national president of the National Association of Piano Tuners, Erroll being the past and last national president of the American Society of Piano Technicians.

Through our efforts as ambassadors of good will and determination, overcame the objection of committee members and succeeded by producing a majority of votes for the merger.

Thus we became the founders of the Piano Technicians Guild by completing the merger details and by vote of the membership became the first co-presidents of the new Guild for its first year.

We greatly appreciate this honor bestowed upon us and sincerely thank the president of the Guild, Marshall Hawkins, other officers, executive board members and all that may have helped to bring this about. Again, we say thank you.

John Travis
Erroll P. Crowl

The International Scene

Fred Odenheimer
International
Relations Committee

Yamaha Marks 100; The Passing Of Bill Kimball

Reading the August 1987 issue of *Music Trades,* there were two items that are of interest to at least some of the readers of the *Journal.*

First, there is quite a detailed article on Yamaha, a company celebrating its 100th year since its founding by Torakusu Yamaha. Our congratulations go to the company and we wish them the best for their future. Mr. Yamaha, after first learning watch making, later went on to a school for the manufacture and maintenance of medical equipment. As a technician in this field in Osaka, his employer at times sent him to Hamamatsu to repair medical equipment there.

The then-small town had a Mason & Hamlin reed organ in their school building that did not function at its best. Since there were only a few organs in the whole of Japan at that time, and technicians to repair them were few and far apart, the town fathers in their distress called on Mr. Yamaha, with his technical ability, to try to fix the instrument. Evidently he was successful. He decided that perhaps he could build organs himself and thus started the company in 1887. By 1890 there were 100 employees and a production of 250 organs per year.

Piano production in the factory began in 1900 with two upright pianos the first year. By 1903, production had increased to 23. In 1920, Yamaha had 1000 employees with a production of around 10,000 reed organs and 1,200 pianos annually. Torakusu Yamaha died in 1916 and was followed by Chimomaru Amano as president of then Nippon Gakki and in 1927 by Kaichi Kawakami, father of Genichi, who had to step in in 1950 at the age of 37 following a stroke his father had. Under the leadership of Genichi Kawakami, the company really prospered but he was also very much interested in bringing music to public schools and started Yamaha Music Schools to further music education for children from age four. In 1983 Hiroshi Kawakami, grandson of Kaichi, became president.

It is quite a story and if you want to know more about it, read the article in the August issue of *Music Trades.*

The other story concerns William W. Kimball, Jr. Bill, as we knew him, passed away recently at age 61. Bill was the only one of the Kimballs who later worked for the Jasper Corporation after they bought Kimball Piano and Organ Company and was there in his last position as District Manager until his early passing.

Bill and his father were always strong supporters of the tuning profession. I remember the Chicago ASPT convention when we visited their old piano factory with the creaky wooden floors. They built a new one later on in Melrose Park, an industrial development near Chicago. Also in Melrose Park in 1954 was the brand new Gulbransen factory all on one floor where parts would go in on one side and the manufactured product on the other end. That was practically a seventh wonder at that time and an entirely new concept of manufacturing, at least for the piano industry.

On this trip also, I cannot forget the visit to Wood and Brooks, Rockford, IL., the careful manufacture of their actions including papering of flanges. From there we went a fairly short distance to DeKalb to visit the Wurlitzer factory, where I saw people working on those brand-new and well-prepared actions. Naturally, I had to ask what this was all about. Well, the actions were transported in a truck in which they were hanging in a large cradle with a number of actions at various levels, unsecured, and they were freely swinging against each other thus breaking parts, so the broken pieces had to be replaced!

We had many calls, letters and get well wishes during my recent illness. Thank you all. It would be too hard to answer all of them, so with your permission I do it in this column. I am mending well and by the time you will read this, I should be back to my old tricks.■

THE
TECHNICAL
FORUM

A New Beginning; Make This Tool: The Key Clamp

Susan Graham
Technical Editor

It is impossible for me to say the appropriate things about the excellent job that Jack Krefting has done with this *Journal*. Under his editorship this has been a highly informative and professional publication, and we all owe him a great debt for the work and time he has put into it. As I take over as Technical Editor I am not thinking of replacing Jack, but of doing the best I can to continue this tradition of an interesting, accurate and well-written *Journal*. We can all understand if Jack wants a break, but I hope I persuade him to continue to write more of his rebuilding series in the future.

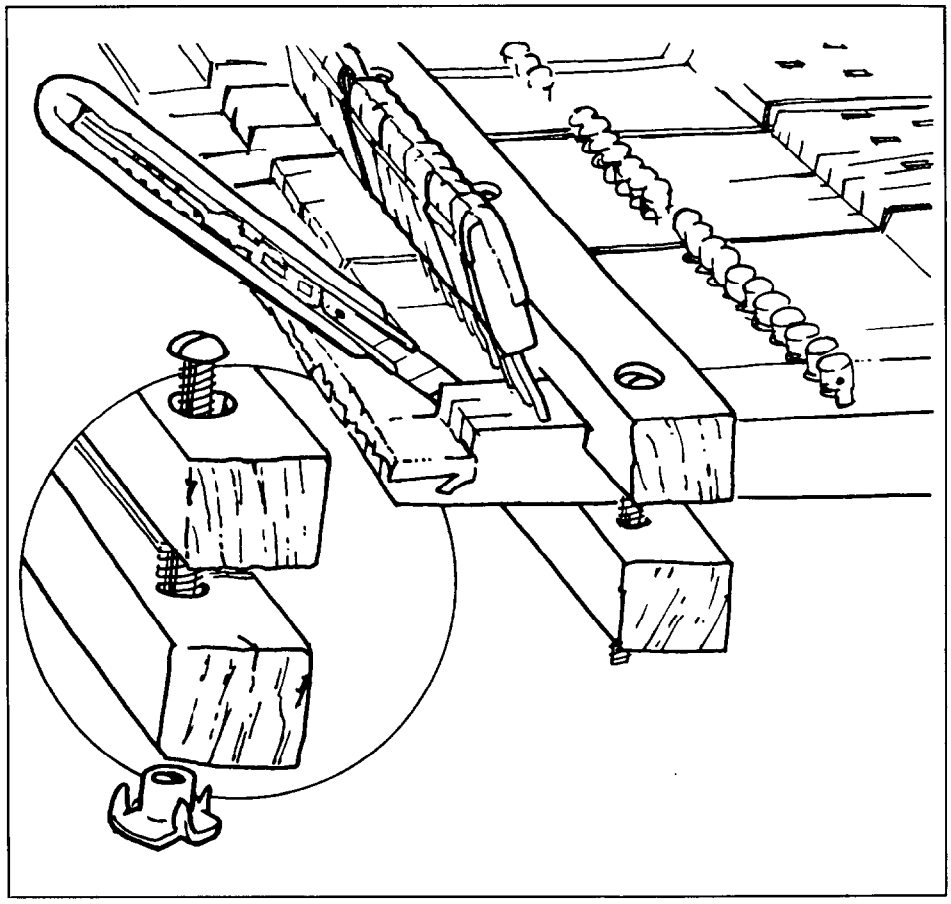
I'm typical of the technician whose time is divided into several days a week of tuning, and several of rebuilding. Most of the rebuilding is "light" – lots of grand action work, and less frequent but steady structural work. The nature of my particular business is dictated by the temperate climate of the west coast, which often seems like piano heaven. Soundboards, bridges and pinblocks have a longer life, being less subject to drastic climatic changes than those in the east and midwest. I'm telling you all this so you know what to expect in my writing. I will present what I can, and strive to gather information and articles from other sources to produce a balanced and useful *Journal*.

We are fortunate that Rick Baldassin is continuing as Tuning Editor and that Jack Greenfield and Nick Gravagne are continuing with their series. Next month I will be introducing a new writer, Edward Swenson of Ithaca, New York. Ed is a specialist in restoring antique and historically interesting pianos. Some of you may remember him speaking at the International Association of Piano Builders and Technicians convention in Toronto. He also has an extensive background in musicology and is on the faculty at Ithaca College of Music. His articles will cover the practical aspects of working on older instruments, particularly as it pertains to the work of the modern technician. His articles will appear in alternation with Jack Greenfield's "Sound Background" series.

I'm pleased to introduce the work of Valerie R. Winemiller, an Oakland area artist who will be illustrating some of the articles appearing in the Technical Forum.

Make This Tool: The Key Clamp

A piano key is not just a stick of wood. It has a key covering, a button, a guide hole and bushing, a balance hole and bushing, leads, a capstan and sometimes a backcheck and end felt on it. The condition of the key unit greatly affects the function as well as the appearance of the piano. For instance, the repetition spring in a grand action not only lifts the repetition lever and hammer, but also pushes down the wippen body to assist in returning the key. If the key offers improper resistance (at the bushings, balance rail hole or capstan) the spring strength may need to be compromised, resulting in other problems in the action. We need to pay attention to the condition of the keys, and find ourselves doing a great deal of work with them. The more efficiently and skillfully we work with the keys and their attachments, the better the results of our overall action work will be. For the next few months,



then, I will focus on various aspects of working with, on and around keys.

Nothing demonstrates the domino theory as readily as a set of keys removed from their frame. Placed on a bench, they refuse to stand solidly or align neatly. Inevitably, one tips over. Others then fall until the key ends tumble off the bench, chipping keytops and knocking off sharps. It is also a truism that as soon as you spread out a set of keys on a surface, you immediately need that surface for something else. Thus begins the tedious task of moving the keys, handful by handful, to a new surface, where they proceed to misalign, fall over, spill, etc.

Working on keys can be very time-consuming, as each one must be picked up and put down. I wouldn't remind you of this unfortunate scenario without offering a solution: the key clamp.

The object of the clamp is to turn the keys into a stable and easily movable unit which makes working on them easy and efficient. I first made these clamps to utilize the key bushing system I learned from Fern Henry and Bill Spurlock. With their help there will be a later article covering this topic, but in the meantime I have found these clamps so useful they rate as an article of their own.

Construction is simplicity itself (Fig. 1 inset). 2x2 stock was used, with 1/4" sliced off one dimension to reduce bulk and weight. The slice was taken perpendicular to the grain of the pieces to minimize loss of strength and possible flexing. Although one clamp could be long enough to accommodate an entire set of keys, this would be heavy and cumbersome. These particular clamps are 40" long – two will hold a set of keys, although three or more could be used if desired. The only other materials needed are three-inch flat-head machine bolts (in this case 5/16" diameter) and matching T-nuts. The pieces were clamped together with C-clamps and drilled through at every six inches. Once again, it is important to orient the grain of the wood in line with the clamping pressure, parallel to the bolt holes. A mark was made at one end of the pieces while they were still clamped so they could be realigned easily. The nuts are inserted into the bottom of the lower piece, and the upper is countersunk so the bolt heads will fit flush. The keys are placed on the lower bar, the bolts tightened and 88 keys are now united into two stable units. They can be turned over, stacked and moved – not to mention worked on – with ease. Depending on the job, the placement of the clamp may be modified and the bolt ends may protrude, but the support is still stable.

Bolt spacing of six inches offers good holding pressure, and also allows the keys to be separated into small groups, which is useful in the two jobs I am about to describe. I also usually put keys 1-38 in one clamp and 39-88 in the other, to even out the weight of the longer and heavily-leaded bass keys.

Here, then, are two jobs which utilize the key clamps:

Key end felt: Good ground damper regulation is impossible if the key end felt is worn. Replacing this can even do miracles to re-regulate a set of dampers which haven't been touched since the piano left the factory. Treating the keys as a unit, it is easy to do.

The old felt is removed with a nasty soup made of five parts hot water, two parts wallpaper remover, and one part acetic acid. Wallpaper remover is a surfactant which breaks up surface tension of water and makes it "wetter." Kodak Photo-Flo or Shaklee Basic H are suitable substitutes. The acetic acid gives the mixture "bite" into hide glue. It is purchased from a photography supply store, in the 68 percent or glacial strength when possible, or in a weaker solution if that is all that is available. The mixture is kept hot in a jar in a hot water bath and drawn off into a small squeeze bottle as needed. At least two passes are required to apply it to the key end felt: the first dampens the felt, so the second can saturate it without runoff.

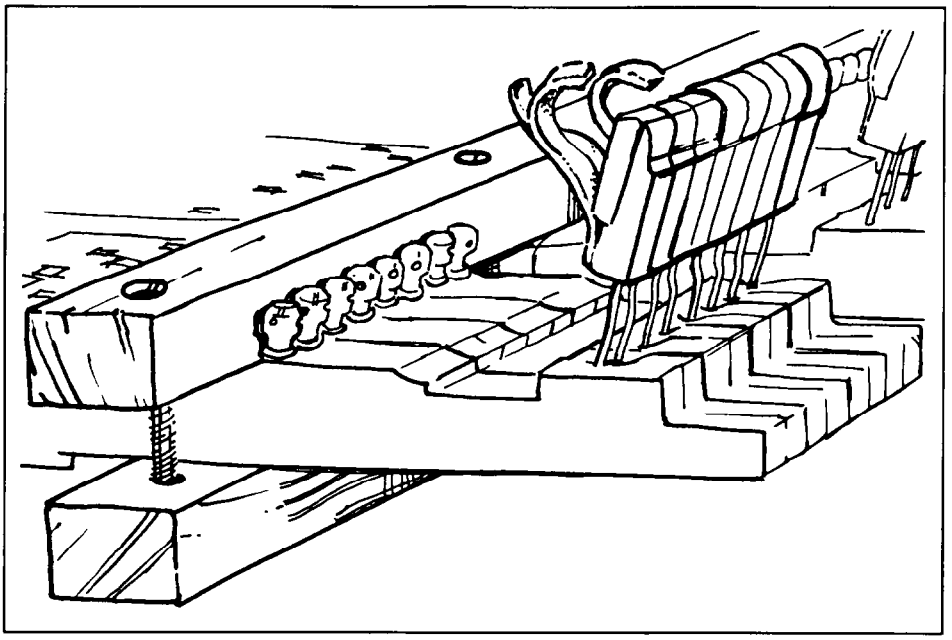
The object is to soak the felt without letting the solution run into the backcheck block or onto the wire. Acetic acid is not selective and is very corrosive. Applying the solution to soak only the felt just requires a little patience. If the felts are left to soak (periodically checked and resaturated if needed) they can usually be peeled off cleanly within an hour. They could be pried up sooner but there are advantages to waiting: some other tasks can be accomplished while waiting, removal requires less effort, and

soaking tends to pull up the old glue, leaving a clean and level surface for new felt. Chiseling off key end felt tends to splinter the wood, making damper regulation difficult. If the felt is particularly stubborn and leaves some residue, I place a rag across the back of the key and saturate it with more removal solution. I may resort to a scraper, finally. The beauty of having the keys clamped is that they support themselves and hold still, and that with the ends butted together the scraper has less chance of gouging or rounding corners. After any remaining moisture has dried out of the keys, the ends can be quickly sanded with 120 grit to remove any final crust of old glue.

Cut the strip of key end felt into smaller strips, matching the lengths to the groups of keys as they are arranged in the clamp (grouped so the sides butt together tightly at the ends). Hide glue is the most appropriate adhesive, since it is quick-setting but reversible. I prefer to leave the final 1/4" of the key end free from glue so I can shim felt during damper regulation if needed. The short strips are glued across the backs of the keys and allowed to set briefly (as much time as it takes to finish gluing other strips will do if the glue is thick enough). Finally, cut the felt apart to match the backs of the key (Fig 1) by slicing between the keys using a thin, sharp blade – my preference is for the snapaway blade knives which can be found in most good hardware stores (Olfa and Stanley, among others, make them). Waxing the blade will help it slide easily between the keys.

This method is not only efficient, but results in blocks of felt which fit exactly to the ends of the keys – something which is difficult to do when precutting the felt. As stated, firm and level key end felt is so helpful for good grand damper regulation it is sometimes worth replacing even as part of a good regulation job.

Another good job for the key clamp is removal of old backcheck buckskin. (Fig. 2) I often replace the entire backcheck assembly, but there are times when just recovering is sufficient. There may be cases where a poor-quality buckskin was used in manufacture, or where bad tail shaping has led to premature wear, but the wire, head and underfelt are in good condition and the backcheck is correctly located in the key (more about this in a later article). Recovering also may be appropriate when a backcheck head is a particular size or shape which it is best to maintain due to space or aesthetics.

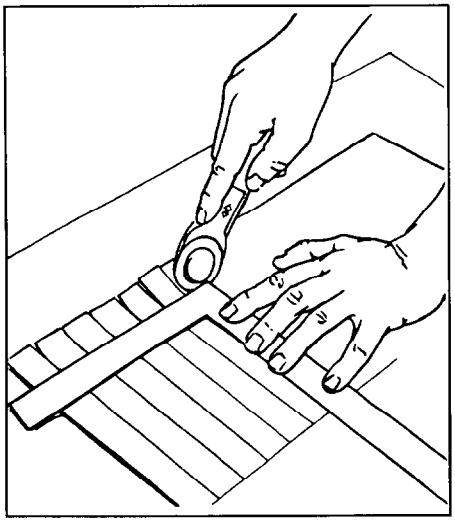


The same hot water/wallpaper remover/acetic acid solution is used to remove old leather. It requires a steady hand and very gentle pressure on the squeeze bottle to apply the solution slowly enough so it only saturates the areas of leather which are actually glued: those which contact the wood of the head and not the underfelt. (If the underfelt is intact, it can be reused, or it can be soaked and removed with the buckskin.) Once again, the solution needs to applied in two passes – one to wet the buckskin, and a second to soak it without letting liquid run down the backcheck wire. If it does, wipe the wire and key dry immediately. After sufficient time, the buckskin will come loose and can be pulled away easily (as with all saturation-removal, if the part resists, wait a little longer...).

Since the keys are clamped in tight groups, the backcheck heads can be squeezed together by hand and a scraper used for further cleanup, particularly at the notch in the back of the head. Scraping will clean up any visible glue residue. The wood can be sanded after drying if needed.

Ideally, the nap of buckskin is so fine it can hardly be detected. This fine grade can be difficult to obtain. Some suppliers, particularly those who deal in foreign supply, have it on occasion but not always. As an alternative, I buy buckskin hides from a leather wholesaler where I can go and sort through a stack of hides looking for the smoothest nap and a hide of uniform thickness which matches the original buckskin. The position of the head could be altered to accommodate a variation in thickness, but too thin a leather would wear prematurely, and too thick requires a head adjustment so far back it may hit the sostenuto blade. The shoulders of low tenor hammers may rest on top of the backchecks if the leather is too thick, as well. The locally-purchased hides have a more noticeable nap than the fine yellow buckskin we see on knuckles and good backchecks. This makes a little noise at first. The noise diminishes quickly as the leather is broken in and I have never had a pianist complain – but it is still worth stocking good buckskin when it is available.

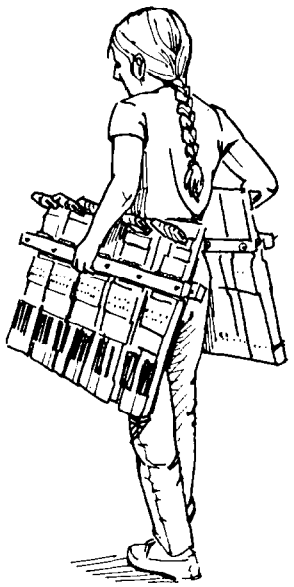
Contrary to the key end felt, which is applied in strips, backcheck leather is precut to size before gluing. To cut from the large piece, draw a reference line, and use a square to cut strips perpendicular to that line, still attached to the main piece at one end. Cut a grid rather than long strips. (Fig. 3) This keeps the strips tightly grouped and parallel. The square is then turned, aligned with cut edges, and



used as a guide as the strips are cut to final length. There is a rotary knife (it looks like a pizza cutter) available at leather suppliers or large sewing-goods stores, which is useful for this job. It follows a straightedge closely and can be used with a good deal of downward pressure. It is used against a rubber backing sheet and must be handled with care – it is easy to slip and roll out of control. Care is used to keep the strips uniform in width. Variation would be noticeable once the strips are installed, and could result in insufficient clearance between heads. If the strips are cut into pieces which are slightly too long, however, they can be trimmed to length after installation. Do not get them too short, which is noticeable. The guillotine cutter or any sharp knife, such as the snapaway blade knife, are also suitable for cutting leather.

When the strips are ready to be glued, I do remove the keys from the long clamp. The first glue joint is at the top of the head – thick hide glue is used, applied only to the wood (not the underfelt) and the leather is pressed into the notch. The nap is oriented so it is smoothed down as the backcheck is brushed toward the wire. Thus, as the hammer tries to rebound and free itself from check, the nap helps to hold it. After the top glue joint has completely dried, the buckskin is pulled tightly over the underfelt, glued to the lower exposed wood surface, and clamped. Clothespins make good backcheck clamps: the jaws are convex so one side should be flattened with a blow of the chisel. The flat side should contact the leather so uniform gluing pressure is applied. After the glue has dried, any excess leather at the lower edge can be trimmed.

The backchecks are now ready to be beveled and regulated in the usual fashion. In later articles I'll go into using the clamp in replacing entire backchecks, as well as proper placement and regulation. There will be more repairs, such as key bushing, featuring the use of long clamps. They require a minimum of time and trouble to make, and are just about the most useful thing to come along in my shop for some time.



Dumb Sales Claim Contest; Technical Questions

As much as we all have enjoyed our chuckles over the dumb sales claim contest, I am discontinuing it as a feature of the *Journal*. It does not seem entirely appropriate for the professional journal of an industry to select for a "dumbness contest" the behavior of a related industry. This is not to say that those who sell – or repair – pianos don't sometimes make outrageous claims, but that we as professional technicians can do more good to educate and assist than to separate out a distinct group for our amusement. If we wish to express our concerns over quality to the manufacturers, it is probably best to do so directly.

Technical questions and articles are always welcome. I have inherited a backlog of several pounds of mail, however, so please be patient while I try to catch up!

Questions and articles regarding tuning should be sent to:

Rick Baldassin
2684 W. 220 N.
Provo, UT 84601

All other comments, suggestions, etc. should be sent to:

Susan Graham
2967 Madeline Street
Oakland, CA 94602

Broken String Before Concert, The Harmonic Piano String, Stretch Number Inferences And Determining Decreasing Third Width

Rick Baldassin
Tuning Editor

In the October issue, an article by Michael J. Wathen was printed which contained typographical errors sufficient to cause confusion among readers, and warrant the re-printing of the entire article. The corrected version follows this column.

Also in the October column, there was a slight problem with Fig. 2, which was a graph showing the cent deviation of several of the partials for all 88 notes. The eighth partial was misplaced by one octave beginning with note B4. Since the change is rather obvious, it has not been re-printed.

Broken String Before Concert

A few Saturdays ago I was tuning along in preparation for a concert with the Utah Symphony. I had plenty of time, the piano was well in tune, and I was looking forward to a nice dinner before the concert. I was making one last critical pass over the unisons, and BANG! a string broke. This was not the first time it has happened to me, and I am sure that those of you to whom it has happened know the sickening feeling that quickly comes over you. I have heard a lot of different methods for trying to stretch the string so that it will stay in tune for the concert. This time I remembered a method suggested by Franz Mohr of Steinway, during a class at the Toronto convention. Franz related a similar experience, and stated that he installed the string, and pulled it a whole tone above pitch. I was game, and tried it.

I installed the string, taking the usual precautions (squeezing the becket, lifting the coil, seating at the hitch pin, etc.), and pulled the string a whole tone above pitch. I stretched the string by pushing down on it with a brass rod, which dropped the pitch by a half-step. I then pulled it back to a whole tone above pitch, and kept pulling it up for about 45 minutes. About 45 minutes before the concert, I let the string down to pitch, each pin a little at a time, pounding severely as I did so. The new string tended to creep back upward, so every 10 minutes I tuned it again. At the conclusion of the concert, the string was still in tune. This was by far the best experience I have had replacing a string before a concert. (Not that I would recommend you try it just for kicks). I went back four days later to touch it up for a rehearsal, and found that the string had dropped only six cents. This was considerably less than with other methods I have tried. Two days later, it was only two cents low. That one tip was worth the entire convention. My thanks to Franz Mohr for sharing it.

The Harmonic Piano String

A while back, I received a letter from Peter Briant, of Great Falls, Montana. The letter asked a couple of questions. The first reads:

Please discuss the demonstration from your July 1986 Las Vegas class in which a bowed piano string was shown to produce harmonic partials, while the same string, when struck normally, produced inharmonic partials. I am fascinated by this yet. I had come to understand that inharmonicity was a consequence of a string's stiffness (and length....). I further assumed that the string's partials would be inharmonic regardless of the manner in which the string was caused to vibrate. You clearly showed that this was not the case, and that a single string could produce both kinds of partials

depending on whether it was a "forced vibration (bowed)", or "free vibration (struck)". Can you explain how this occurs?

The demonstration to which Peter refers did in fact take place at the 1986 Las Vegas Convention. In the class we were discussing various types of octaves tests. The question was posed, "Why must we be concerned with different types of octaves in the piano?" The answer, of course, was "Inharmonicity." I then asked the class what caused inharmonicity. There were several replies given, none of which I would accept as correct. So there were more replies, and more replies, and I just kept shaking my head no. Finally the class demanded to know my explanation, since I had rejected theirs. I replied that inharmonicity in the piano was caused because of the free vibrational nature of the string. I then stated that if the string were forced into vibration, the partials would be harmonic, in spite of all of the string's stiffness and nodes and all of the other explanations. I asked how many of the class believed me. A few hands went up. I then asked how many of the class would like me to prove it. All the hands went up. It was first demonstrated that the string, when struck, produced inharmonic partials. For ease of measuring, only the octave partials were measured. The string when struck read 0.0 for the first partial, +1.6 cents for the second partial, +3.4 cents for the fourth partial, and +12.7 for the eighth partial. The action was then removed, and the same string was then bowed with my special piano bow which I had made just for the occasion. The string when bowed no longer read 0.0 for the first partial. Rather than re-tune the string, the Accu-Tuner was adjusted and reset to read zero at the first partial when the string was bowed. The Accu-tuner was set up one octave to read the second partial, which also read 0.0. The string also read 0.0 for the fourth, eighth, and sixteenth partials. I cannot remember whether the thirty-second partial was read or not, but reading continued until no pattern was displayed on the tuner. The string was then plucked, and readings were taken. The readings for plucking were different than when struck, and also differed when plucked toward the treble or bass. Here it was demonstrated that the same string could either be harmonic, or inharmonic in varying degrees depending on how the string was caused to vibrate.

Now back to Peter's question. How can a bowed piano string exhibit harmonic partials? When the string is bowed, a disturbance is set up which originates at the bow and runs to the termination points of the string, and is reflected back, which triggers the release of the bow. This triggering action is periodic, and therefore the response is periodic. If the response is periodic, then the partials will be harmonic. The bow forces the string into vibration in a series of pull-slip, pull-slip, etc. The bow begins to pull the string until the interference is reflected back from the string terminations, which causes it to release, or slip. The resulting waveform is very similar to a sawtooth wave, which has all partials present, and is periodic in nature.

Since in all of the above experiments, the physical properties of the string did not change, (i.e. the diameter of the wire remained constant, the string length did not change, nor did the tension change), the determination of whether the partials were harmonic or inharmonic, was whether the string was a forced vibration (bowed), or free vibration (struck or plucked). This was disturbing to some class members, who still believed that the stiffness of the wire was the cause for the inharmonicity. Since we do not have bowed pianos, maybe it could be correct to say that it is the stiffness of the wire that causes inharmonicity in the piano. I would prefer to say that it is because the piano string is a free vibration that there is inharmonicity in the piano, and that the stiffness of the wire accounts for the amount of inharmonicity present.

I would like to thank Dr. William Strong of the Physics Department at Brigham Young University for his help in the explanation of the harmonic nature of bowed strings.

Stretch Number Inferences

Peter's second question has to do with the Stretch Number (see August 1987 for complete explanation of Stretch Number and Stretch Calculator). It reads:

Those of us using Accu-Tuners routinely analyze F4 on each piano to determine a "stretch number." At one time I understood that from this number we could infer something about the quality of that piano. Later, I heard that this value simply told whether the instrument had a high, medium, or low tension scale. Aside from being the basis used to determine temperament values for a given piano, what other conclusions, if any, can be usefully inferred from this Stretch Number?

The Stretch Calculator system was invented by Dr. Albert Sanderson, so I sought his opinion on this matter. It was his feeling that determining the Stretch Number was a way of measuring the inharmonicity of that string, so one can infer that a piano with a high stretch number has a high inharmonicity scale. According to Dr. Sanderson, there is an ideal range for stretch numbers for different sized pianos. Concert grands should range from about 3 to 5, average grands and uprights from about 4 to 6, and spinets from about 5 to 7. If you measure a concert grand with a stretch number of 7, you can infer that it is not a very well scaled concert grand. However, a spinet with a stretch number of 7 would be acceptable. On the other hand, a spinet with a stretch number of 3 would sound as bad as a console with a stretch number of 8. The stretch number can be too low as well as too high. From these guidelines we can see that the stretch number does give us information about the inharmonicity of the scale, and that within certain guidelines, the quality of the scale relative to the size of the instrument can be inferred as well.

When I asked Dr. Sanderson if there was anything else which the Stretch Number could tell us, he replied that it can tell us somewhat concerning the tonal characteristics of the piano. In general, pianos with low stretch numbers are more mellow sounding, and pianos with high stretch number are more harsh sounding. These terms are not being used as they would be to describe

voicing (with soft hammers or hard hammers) but more to describe the amount of activity (beating) going on in the piano when it is tuned. In a piano with a very low stretch number, there is relatively little activity, while in a piano with a high stretch number, there is considerably more activity. This is one of the reasons that pianos with stretch numbers too low or too high do not sound good. If the number is too low, the piano will sound bland, and if the number is too high, it will never sound in tune.

I would like to thank Dr. Sanderson for his help in answering Peter's question.

Determining Decreasing Third Width

Our final question comes from Vince Mrykalo, of New Midway, Maryland (formerly of Provo, Utah). Vince writes:

Is there a way of predetermining how much wider the Major Thirds should be in the temperament octave (F-F) at the lower end than the Major Thirds at the upper end using the Accu-Tuner? We know that the lowest third is a fraction of a cent wider than the highest one, with the rest gradually narrowing between, but how much deviation should that be? Is it left up to personal taste? Or is there a more concrete guideline? Or is it too picky to bother with?

To my knowledge, there is no easy way of pre-determing what the width of the Major Thirds will be without a lot of measuring. If there was, someone would have figured it out by now. In fact, according to Dr. Sanderson, there is no correlation between the Stretch Number and the width of the Major Thirds. Last month I stated that two pianos could have the same stretch number and sound differently. This is the reason why. One piano could have a stretch number of 5.0 with Major 3rds 13.5 cents wide, and another piano with the same stretch number could have Major 3rds 12.5 cents wide.

Tuning by Direct Interval Measurement is executed in a slightly different manner than a normal electronic tuning method. Where normally in the temperament, F is tuned with the tuner set on F, and A is set with the tuner set on A, in direct interval tuning, both of these notes would be tuned with the tuner set at the coincident partial, with a cent width entered. In the case of tuning the F3-A3 3rd, the tuner would be set on A5 (the coincident partial for this 3rd). If A3 were tuned first with the tuner set on A5, from the cent setting for A3, we would subtract a cent width (say 13.5 cents), and tune F3 with the tuner still set on A5. In this system, knowing the amount to subtract (or the interval width) becomes critical.

The determination of the width of the Major 3rds and other intervals by direct interval measurement using an instrument such as an Accu-Tuner is considered by some to be a highly accurate approach to tuning. It is of itself, however, not without problems. There is simply no perfect system. In the temperament octave, some profess that the interval width should remain constant, while others profess that it should decrease. One thing is certain, it varies from piano to piano. The best bet is usually to let the piano tell you where it wants to go without imposing artificial guidelines or restrictions upon it. In the piano which was graphed over the past couple of months, the thirds in the temperament started out by increasing in width, leveled out, then decreased in width. Some pianos work fine with a level width, while others actually require that the curve be tilted upward at the top of the temperament.

One method for determining the decrease would be to set F3-A3, A3-C♯4, and C♯4-F4 at equal width between the F3-F4 octave. Tune the A3-A4 octave, and measure the F4-A4 3rd. If this 3rd is the same width as the previous 3rds, then no change is required. If this 3rd is wider than the previous 3rds, then the F4 can be adjusted upward to smooth out the transition. Most likely, the F4-A4 3rd will be less than the previous 3rds. If so, then the F4 can be adjusted downward to help smooth out the transition. For example, let us say that the 3rds between the F3-F4 octave measured 13.6 cents. The F4-A4 3rd measured 13.0. To smooth out this transition, the F4 could be lowered by 0.2 cents. The 3rds would then progress as fellows F3-A3 = 13.6, A3-C♯4 = 13.6, C♯4-F = 13.4, and F4-A4 = 13.2. This method gives some idea as to the piano's requirements for a progression of 3rds.

As to whether the system is too picky to bother with, that is what must really be left up to individual taste. There is certainly no easy, predetermined way to figure this out, but the results, on the other hand, can be extremely pleasant.

Our thanks to Franz Mohr of Steinway for his tip on string replacement, to Peter Briant and Vince Mrykalo for their questions, and to William Strong of Brigham Young University and Albert Sanderson for their help with the answers.

Please send your questions and comments to me:

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AT
LARGE

The Equal Beating Theorem: A Proof For Just Intervals

Michael Wathen
Cincinnati Chapter

The necessity of aurally verifying the tuning of just intervals in the piano requires the use of tests or proofs. The Equal Beating Theorem provides the basis for developing any and all valid test (s) for the tuning of fourths, fifths, and octaves in the piano. In following we present the theorem and show its inexpendable use for treating inharmonicity.

A just interval is one in which the ratio of the frequencies of the fundamentals can be expressed in natural numbers and have their coincident partials at the same frequency. Natural numbers are defined as N [1,2,3,...].

The simplest just interval ratio is that of a unison having a ratio of 1/1. The ratio of a semitone or half step in equal temperament is $\sqrt[12]{2}/1$ which is not a just interval because the $\sqrt[12]{2}$ does not belong to the set of natural numbers. The ratio of an octave is 2/1 which is a just interval in which the upper note is expressed by the number two and the lower note is expressed by the number one. 2/1 not only indicates the frequencies but it also indicates the location of the coincident partial of the interval. In this case the second partials of the bottom note is matched to the first partial of the top note. The ratio 4/2 is also a ratio of an octave but of different type indicating that the fourth partial of the bottom note is matched to the second partial of the top note and that the ratio of the fundamental frequencies is 4/2.

Here is where the problem arises that separates from the theoretical model. A 4:2 octave in a piano cannot have its fundamental frequencies in an exact 4/2 ratio. A deviation from our theoretical model occurs due to the inharmonicity factor. We must change our previous definition of a just interval in order for it to be a useful vernacular for piano technicians. We need only use it in the sense which indicates the status of the coincident partials since we have no real need of concerning ourselves with the frequency of the fundamentals in actual tuning practice.

In the piano, due to the inharmonicity factor we will often find just intervals of a particular type such as the 4:2 which will be virtually exclusive of all other octave types. For example, C3-C4 tuned just as a 4:2 octave can exclude the other octave types such as the 6:3 or 8:4 from being just. Beats at these levels of coincident partials will be an aural indication of this fact. We will fall short of providing our position emphatically without the use of an additional note that has as one of its partials the coincident partial of the note being proved.

Our additional note can be adjusted; set up or down to facilitate its use as a reference note by producing beats from 2 to 8 per second. If the beat rate is too slow, we cannot be sure of its movement and we are no better off than we were just listening for the absence of beats in the just intervals.

Equal Beating Theorem

Any given interval having a set of coincidental partials tuned at the same frequency will have two intervals formed from one additional note which will beat equally in comparison. The two intervals will have the same coincidental partials as the interval being proved.

Proof

1. Choose any interval: example: C3-A3
2. Determine the coincidental partials:

		partials						
interval	C3	C3	C4	G4	C5	(E5)	G5	A♯5
	A3	A3	A4	(E5)	A5	C♯6	E6	

coincidental partial: E5

3. Find one additional note that forms an interval using the same coincidental partial: additional note which has E5 as one of its partials: E3

4. Compare the beat rates of the two intervals formed from the additional note.
Original interval C3-A3

Additional note: E3
Two intervals formed from the additional note C3-E3, E3-A3.
C3-E3 will beat at an equal rate as E3-A3 when the interval C3-A3 is tuned just.

It is common practice to apply this same principle we find in the equal beating theorem to set the pitch of the piano to a standard such as the tuning fork. Our goal is to match the first partial of A4 to the first partial of the fork and in effect tune a 1-1 unison. We need an additional note that has as one of its partials A4. The chart below indicates five of the possibilities.

Partial #	Note	Partials				
1	A4					
2	A3	A4				
3	D3	D4	A4			
4	A2	A3	E4	A4		
5	F2	F3	C4	F4	A4	

Since we need some point of reference other than the note we are tuning, then the first possibility we naturally exclude. The second choice is of some help but only if it is far enough away to produce a countable number of beats. Using A4 is also in the true sense of the word handy, in that we need only one hand to play the additional note simultaneously with the note being tuned, with the other hand free to manipulate the note being tuned. One pitfall in the use of our second choice, is the presence of the octave doubling of the partials i.e. A3-A4 have another set of coincident partials at the A5 level. Particular care must be taken not to confuse the two sets of partials. It is for this reason that our most common additional note is F2.

Here is a step by step method that can serve as a example of how to solve the problem of which test to use. We begin by making a chart showing the partials of each note. (Figure 1)

We show pairs of coincident partials with connecting circles. We determine the octave type and its coincident partial. The first circled frequency of the bottom note is under the column headed by the partial number two. This frequency is found in the upper note under the column for partial number one. Thus;

Interval	Type	Coincidental Partial
F3-F2	2-1 Octave	F3
	4-2	F4
	6-3	C5
	8-4	F5
	10-5	A5
	12-6	C6
	14-7	D♯6

If we wish to verify 10-5 octave type, our coincidental partial would be A5. Using the Equal Beating Theorem our next step is to list the notes that have A5 as one of its partials.

As its first	A5					
second	A4	A5				
third	D4	D5	A5			
4	A3	A4	E5	A5		
5	F3	F4	C5	F5	A5	
6	D3	D4	A4	D5	F♯5	A5
7	B2	B3	F♯4	B4	D♯5	F♯5 A5

We can use any of these notes as our additional or reference note. Albert Sanderson suggests that the most convenient way to classify the tests is to use the numbers of the octave type plus the partial number of the additional notes for example 10-6-5, where ten refers to the tenth partial of the bottom note, five to the fifth partial of the top note and six to the sixth partial of the additional note which in this case is between the note represented by 10 and the one represented by the number five. This note would be D3 which is a minor third below the top note.

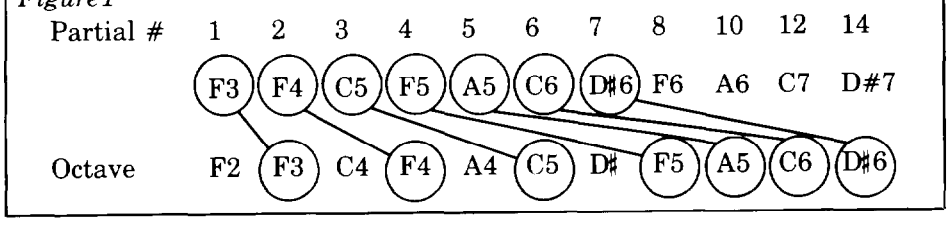
Octave type 10-5
10-6-5
major sixth 10-6
minor third 6-5

We can add any number to the 10 and 5 to come up with a different test, e.g. 10-7-5. Referring to the chart again we find that B2 is the note that has as its 7th partial A5. Therefore, we may say that if F2-F3 is a just 10-5 octave, then F2-B2 will beat at the same rate as B2-F3.

There is a theory in acoustics which is called formant theory which is an attempt to understand how we perceive and discriminate between sound qualities. Earlier it was Helmholtz who stated that vowel sounds in human speech were discerned by a rather rapid unconscious process in which the listener perceives the relative strengths of partials. Formant theory suggests that lacking other markers of sound such as attack and decay, we identify sounds by perceiving areas of frequency accentuation called formants. These areas are accentuated in general within and are a specific characteristic to the instruments producing the sound regardless of the fundamental pitch. In the case of a vowel sound like "e" it would have a certain resonance or formant region regardless of the fundamental pitch.

When choosing which interval type to tune or favor, compromise the interval types that have coincidental partials in the fifth octave of the piano. This is no hard fast rule, but rather something that is believed to be by the author the method that would produce the most desirable outcome. Unfortunately, I have no published studies to reference my opinion to. What I do have is the practical experience of tuning and being aware of these principles and it is from this that I conclude that the formant regions in the piano can be found in octave five, part of octave two, a range in octave seven, and in smaller pianos such as spinets and consoles the range from F4-B4. That the focus of pitch in the piano is in octave five is quite evident from the fact that when we examine current practice of setting temperament, we find the majority of temperaments are set in the third octave but use partials in octave five. We listen for rising thirds, fourths, fifths, sixths, tenths, all in

Figure 1



octave five. Any partials above octave five are too short lived in pitch duration to be useful.

In determining how our F2-F3 octave might be tuned, we use the octave five rule and determine which of our types fall within the scope of the fifth octave. Three types will need to considered, the 6-3, 8-4, and the 10-5. Since the 6-3 is barely within the range of the fifth octave, we need not give it too much weight other than determining that it is greater than just. Octave types will progress just as all intervals will in the piano. A particular type of octave will progress gradually from narrow to just to wide as we move down in the bass. Generally, in the range of the piano in which we are examining, it is safe to assume that the 6-3 will be greater than just. We use the equal beating test to verify this. For example we might find in our 6-5-3 test that the 6-5 interval is beating more slowly than the 5-3 interval. Assuming that our 5-3 interval is wide, then we are able to say that the 6-3 interval is greater than just.

Next we must determine the status of the 8-4 and the 10-5 octave for our interval F2-F3 using the aforementioned procedure. If we wish to look at the 8-4 interval we might choose the 8-5-4 test. If we wish to look at the 10-5 interval we might try the 10-7-5 or the 10-5-4 test. Of course, all this seems fine in theory but can we actually use these tests? It is often the case that the 8th partial in the bass cannot be heard due to the striking position of the hammer effectively blocking the sounds of this partial. If this is true, then we would need to compromise only between the 10-5 and the 6-3 interval types. Otherwise we would want our interval to be just or greater than just at the 8-4 level and less than just at the 10-5 level. If we were to listen to the 12-6, we would most likely find it quite narrow. We tune chromatically down in the bass eventually moving closer and closer, finally achieving a just 10-5 octave type and an increasingly less narrow 12-6.

The inharmonicity factor tends to rise rather abruptly in smaller pianos especially when we reach the single wound strings. The fourth octave partials that are found in octave one do not decrease in amplitude in smaller pianos, thus forcing us to make compromises along the partials in octave five. In larger pianos such as seven- and nine-foot, the lowest notes can be obtained by tuning just 14-7 octaves, which is a matter of preference. Octave types beyond 14-7 are of little use since partials above 14 tend to crowd closer and closer together, e.g. 15 and 16 are so close together that it is nearly impossible to discern from which partial pairings beats come. The Equal Beating Theorem provides us with any and all tests for just or nearly just intervals in the piano.■

Fitting The Soundboard

Nick Gravagne
New Mexico Chapter

Installing a grand piano soundboard is more cumbersome in piano rebuilding than in building. Virtually all grand piano makers construct the inner and outer rims in separate operations as it is less troublesome to fit the soundboard assembly to the inner rim and notches while the outer rim is not attached. The inner rim can be completely bellied (plate, strings, bearing, etc.) prior to attaching the outer rim. Fitting a new soundboard in rebuilding, however, is a bit more difficult as the outer rim obstructs a clear view of what is going on. In particular, fitting the ribs to the notches presents most of the difficulty. As mentioned last month, the ribs should position directly over their notches and, upon being pressed down, should bottom out at the same time that the soundboard makes contact with the rim. In order for this condition to exist, most of the ribs will require side-to-side trimming and/or depth shaving with a sharp chisel. Also, the rib might be a bit under pressure in the crowning press. The notches in many pianos do not extend all the way to the outer rim. So, a too-long rib must be trimmed back to fit the length and configuration of the notch. The operation of fitting a soundboard necessitates placing the soundboard in and out of the piano many times until a satisfactory fit is achieved. Although the process is trickier than what most manufactures have to face, it is not a particularly laborious or frustrating job.

Before going on,it should be noted that if the new soundboard is being installed with bridges attached (it's not always done so), the bridge location measurements and devices must locate the fore-and-aft and side-to-side position of the soundboard. This being primary, it is then necessary to fit the ribs to the notches where they fall. Since these recent articles are not intended to be a complete discussion on soundboard installation, certain other relative considerations, such as bridge location, damper guide rail screw hole locations and downbearing are being passed over for the present.

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> Since these relationships cannot be seen they must be ascertained through clamping. Because the rim is hard wood and the rib is soft, the clamping pressure will introduce an indentation, or a glazed and/or smudged appearance on the rib end indicating where rib trimming is necessary.
>
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When the ribs are more or less lined up over their respective notches as explained last month, it is time for a dry fit with pressure from the bar clamp and beveled press blocks. The width of the rib relative to the width of the notch is checked and corrected first. This is followed by shaving the rib thickness (depth), if necessary, so as to correctly set the rib in the notch. It is absolutely imperative that the rib end not be too thick, thereby preventing the soundboard from making full contact with the rim. The fitting process follows but first see *Figure 1.* Three rib ends are shown fitting above their notches. Rib A will not fit the notch because it is too wide. Rib B has the correct width but its right side is too deep.

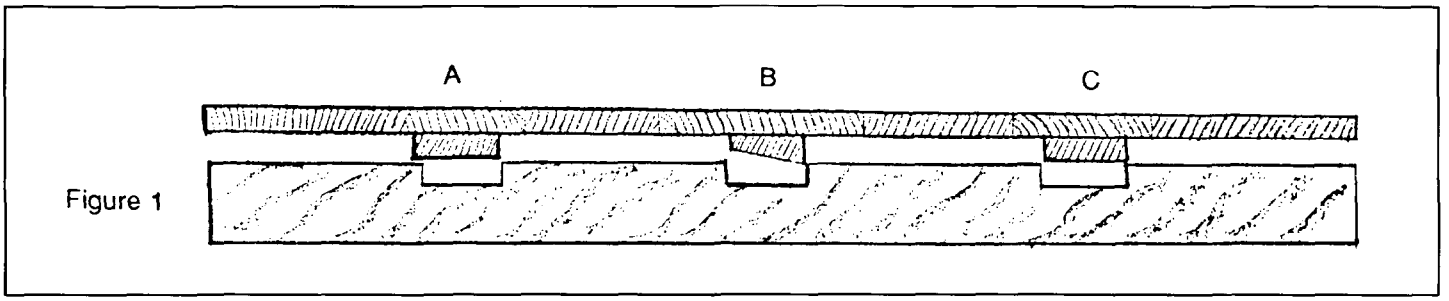

Figure 1

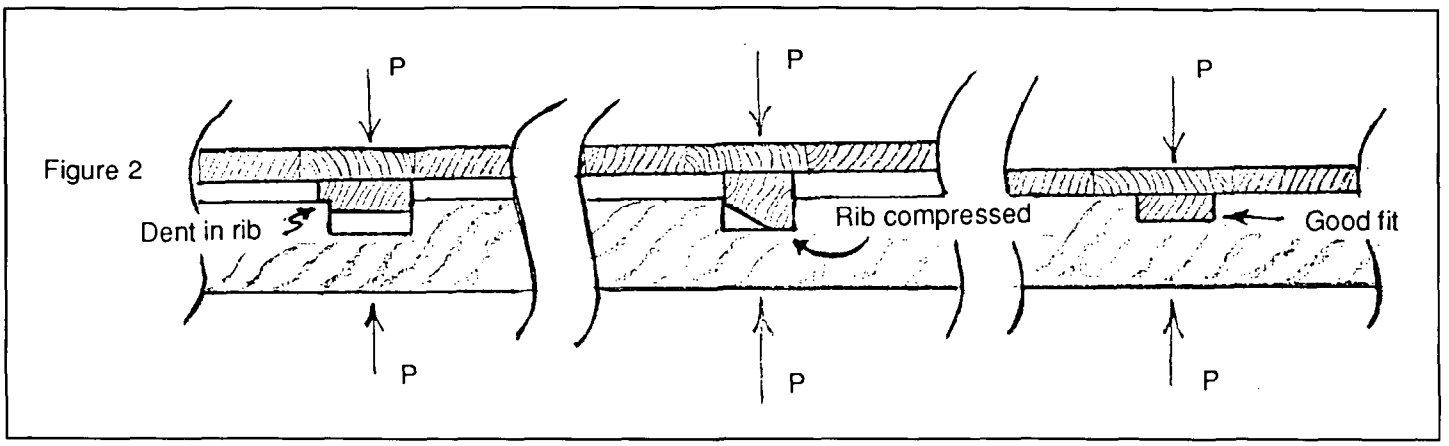

Figure 2

It will require shaving. Rib C is just right. It will press down into the notch as the underside of the soundboard meets the rim.

Since these relationships cannot be seen they must be ascertained through clamping. Because the rim is hard wood and the rib is soft, the clamping pressure will introduce an indentation, or a glazed and/or smudged appearance on the rib end indicating where rib trimming is necessary. *Figure 2* shows ribs A, B, and C under a dry pressure fit. The illustration is self-explanatory.

The general process is as follows. Locate the positions of the notches on the inside of the outer rim with chalk or tape. Don't forget the belly rail. Place the soundboard in the piano. Position a few clamp and block arrangements (explained in the last article of this series) at various points to more or less hold the board in place. It doesn't matter where but definitely put them at the opposite ends of the soundboard grain; that is, the upper treble corner and lower bass curve. Now with one clamp/block apply pressure at all the notches one at a time. That is, with the same clamp and block, apply pressure, release and move on to the next notch, etc. Use C-clamps and scrap wood at the belly rail. Use enough pressure to force the soundboard and rib down tightly but not with a tremendous crunch. The sensation of knowing when the rib is going into the notch or whether it is being prevented from doing so is quickly learned and felt at the clamp screw.

Remove all clamps, remove the soundboard using the nose-bolt holes or the bridges as "handles." Be extremely careful not to break off a piece of the soundboard at the corners and curves. Place the soundboard rib-side-up on padded sawhorses or the rim of the piano and inspect the rib ends for the compression, or glazed and smudged marks mentioned earlier. Don't forget the sides of the ribs. It is now simply a matter of removing wood at these places with a chisel. It is rather like fitting a pinblock. Don't remove more wood than necessary. Use a shallow angle with the chisel and use careful and deliberate strokes. When satisfied that the ribs are ready for another dry fit, place the board back in the piano and repeat the process. Each time a dry fit is tried more of the ribs will be correctly seated than were on the previous try. Continue the process until all the ribs fit their notches and the soundboard can easily be pressed down to the rim at all points.

Although the explanation of these techniques should suffice in a general sense, there are many incidental techniques which not only secure more reliable results but tend to speed up the process as well. Two such considerations follow.

In order to be certain that the soundboard is completely touching the rim, and not being held up by a too-thick rib, it helps to know in advance just how far above the inner rim the top of the soundboard must be. One way of doing this is to place the fitted spruce panel on the inner rim *before it is crowned* and clamp at every other notch or so. Check the fit from under the piano. At all accessible areas scribe a line with a sharp awl on the side of the outer rim using the top of the soundboard as a reference guide. Now when it comes time for fitting the ribs in the dry run-throughs, there is a plainly visible reference mark to aim for. Of course, this only works if the thickness/taper is not altered after making this reference. Some rebuilders grade the spruce sheet prior to crowning and some do afterwards. This technique has an interesting, if not practical, side benefit. With the uncrowned spruce panel clamped to a beveled rim, a measurement of the amount

of the forced upward deflection in the board can be taken. Some surprises may be in store!

Although the use of feeler gauges (or other thin, flat blade) is shunned by some rebuilders as unnecessary or redundant, their use in checkng the soundboard fit has obvious advantages. The blade is inserted at the soundboard/rim joint and the rib/notch joint. With the joint in question under pressure, the blade should not be able to be inserted. If it cannot at the board/rim joint but can at the rib/notch joint, it means that the rib end was originally pared a bit too thin, or was made so in the fitting process. If this gap is only thin feeler gauge thickness, it is not a serious problem providing that a good gap-filling glue such as hot or cold hide glue is used when it comes time to glue in the soundboard. A large gap such as can be seen by eye (use mirror and flashlight) is much too large. Either build up the notch or the rib and refit. The ideal, though, is a tight fit everywhere. Feeler gauges can offer misleading information.

What appears to be a tight fit at the outside, accessible joint does not necessarily mean that the board and ribs are all the way down in the bevel where they cannot be checked. The aforementioned scribed line is a help here along with a good "feel" at the soundboard and rim. The big disadvantage of working with feeler gauges is that the workman must be under the piano with lights, etc. If the piano is on a shop truck, the technique is almost impossible. Furthermore, the tail and belly rail are virtually inaccessible from underneath in many pianos.

Piano technicians are problem-solving people, so any obstacles met on the way to the clear objective will undoubtedly be hurdled by the creative ingenuity and intuition of the rebuilder.

(I thought that the gluing process would be included in this article, but as that phase of the discussion will lengthen the article too much, it is being held until next time. See you then. NG)

Broadwood Succeeds Shudi; Advances In Early English Grand Piano

Jack Greenfield
Chicago Chapter

Broadwood Takes Control of His Firm

A little more than a year after his marriage to Barbara, Shudi's daughter, John Broadwood assumed sole management of the Shudi business as Shudi went into retirement. The change was formalized with legal papers in March, 1771. Among the terms was the requirement that Broadwood pay a royalty for each harpsichord sold and an annual rent of 50 pounds for the shop premises. In return for inheriting ownership of the patent for the "Venetian Swell" at Shudi's death, Broadwood was to provide an annuity of 40 pounds, the total for royalties on the sale of 22 harpischords plus rent. Shudi died in August, 1773. His son, who inherited his share of the partnership, now had even less interest in the business than before and finally severed connection after 1782.

The detailed financial records left by Broadwood show him to have been an excellent business executive as well as an extraordinary craftsman. The firm was involved in more than building and selling harpischords. Acting as a dealer, it also sold instruments made by other manufacturers. Other activities included rental of harpischords, tuning service and supply of parts to other instrument manufacturers. In spite of the rapidly rising interest in pianos, Broadwood sold an average of 22 harpischords annually during the 1770s, compared to 15 annually in the preceeding decade. His customers included prominent members of the British aristocracy and distinguished people such as Maria Theresa and Joseph Haydn in other countries. Broadwood exported instruments to France, Italy, Portugal, Denmark, Russia, the West Indies and North America.

Broadwood's rental and tuning business kept him and his staff busy during periods when instrument sales were low. His clientele usually had their keyboard instruments tuned at least once a month. The usual tuning fees were from 5s. to 7s. 6d. depending on travel distance. Several clients far out in the country paid 10 s.6d. The usual monthly charge for harpischord rental was 10s. 6d. (Currency values of the period were 12d. or pence equals one s. or shilling, 20 s. equals one pound.)

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Among the terms was the requirement that Broadwood pay a royalty for each harpsichord sold and an annual rent of 50 pounds for the shop premises. In return for inheriting ownership of the patent for the "Venetian Swell" at Shudi's death, Broadwood was to provide an annuity of 40 pounds, the total for royalties on the sale of 22 harpischords, plus rent.

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A day-to-day record of all transactions by the firm including sales and tuning was kept and entered into a journal. The Broadwood journal shows an average of about 700 transactions per year during the 1770s. A chart of Broadwood business data in *Broadwood By Appointment* by David Wainwright shows about 20 transactions involving pianos in 1773 rising gradually to about 60 in 1780. These transactions could have been either sales, rental or tuning. While there is uncertainty about the origin of earlier pianos from Broadwood, in *A Description and History of The Pianoforte,* Hipkins states that by 1773, Broadwood had begun to build "Zumpe model" pianos.

The First English Grand Pianos

Information from the writings of Burney given by Warwick Henry Cole in "The Early Piano in Britain (*Early Music,* November, 1986) indicates that builders had started work on grand pianos in England by the mid-1760s. Burney's account of early piano making in England ("Harpischords" in *Rees's Cyclopedia)* states

After the arrival of John Christian Bach in this country...all the harpischord makers tried their mechanical powers at piano-fortes but the first attempts were always on the large size til Zumpe, a German...constructed small piano-fortes of the shape and size of the virginal.

Burney's writings imply that Americus Backers began before Zumpe made any square pianos was first in England to construct a commercially acceptable grand piano. The nameboard of the oldest known English grand piano is inscribed "Americus Backers No. 21 Londini fecit 1772". The number 21 indicates the probability that Backers had building them for several years. Burney wrote in 1774: "Backers makes the best piano fortes, but they come to 60 or 70 pounds, with 3 unisons – of harpischord size."

Backers' 1772 grand piano, now in a collection at the University of Edinburgh, closely resembles an English harpsichord in appearance. It is in a mahogany case supported on a trestle type stand, four legs connected by stretchers. It is double-strung throughout across a five-octave compass, F1 - F6. Besides being the earliest with the type of action it contains, it is the oldest known with foot pedals and metal bracing. The pedals project from the front legs of the stand. The structure is reinforced with three narrow arch-shaped plates known as gap stretchers, bolted in place in the gap between the back edge of the pinblock and the face of the belly rail below the front edge of the soundboard.

According to Broadwood notes and other accounts, during the early 1770s Broadwood and Robert Stodart, one of his assistants, helped Backers perfect his action, going to his shop in the evenings after finishing their own work. The Broadwood records give credit to Backers for invention of the action. Stodart left Broadwood in 1775 to open his own shop where he specialized in grand pianos. Broadwood was not ready yet to begin building grand pianos since there was still a large demand for his harpsichord and he had just started to produce square pianos.

Noting the continuing demand

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Broadwood and Robert Stodart, one of his assistants, helped Backers perfect his action, going to his shop in the evenings after finishing their own work. The Broadwood records give credit to Backers for invention of the action.

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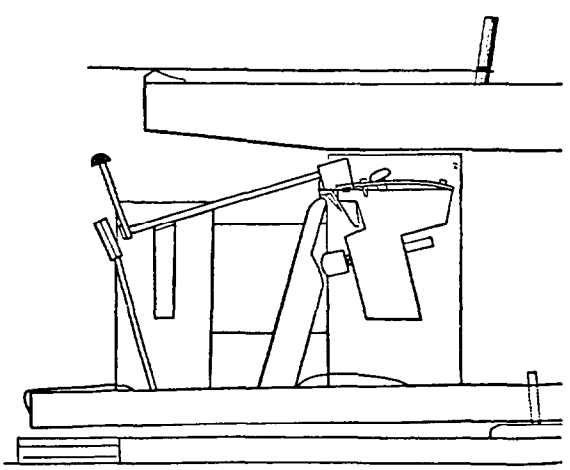
for his harpsichords, soon after starting his own business, Stodart designed a piano-harpsichord which he patented in 1777. Stodart's use of the prefix "grand" in his patent was the first time this term was used for a wing-shaped horizontal piano. Stodart's patent also contains the earliest drawing of the action which he and Broadwood had helped Backers design. This type of action with various refinements, widely used by other manufacturers, became known as the "English grand action" or simply the "English action" as distinct from the "Viennese" action.

The Smithsonian Institution, Washington, D.C. has a piano harpischord that may have been built by Stodart. The name inscribed:

Combined
Harpischord & Grand Piano
Upper Bank Piano
Lower Harpsichord
Robertus Stodart Londini Fecit 1777
Inventor & Patentee Robertus Stodart

The instrument is primarily a piano with trichord stringing across a five octave compass F1 - F6. It has separate keyboards for the piano action and for the harpsichord action with pairs of jacks which pluck the outer strings. It has two pedals for the piano action. Unfortunately, the authenticity of the inscription is uncertain. Another piano at the Smithsonian inscribed with Stodart's name but with the later date 1790 is considered authentic. This piano is also trichord-strung over a five octave range with unwound brass strings for the bottom octave and iron for the rest. Triple stringing was a characteristic of the early English grand pianos which give them more volume than Viennese pianos which were double strung for most of the keyboard and triple strung only for the highest notes. To provide increased structural strength for the greatest tension of the larger number of strings, the wooden framing of the English grands was reinforced with the metal gap stretchers used earlier in the Backers 1772 grand piano. The ivory naturals and ebony sharps and front key pins were derived from the harpischords of Shudi and Kirkman. The front key pins replaced the slotted rear guide rails of previous instruments.



Backers' grand action as shown in Stodart 1777 Patent. (Dampers omitted).

The comparison of the final Cristofori action (*Journal, March 1986, p. 16)* with Backers action as drawn in the Stodart patent shows the direct relationship. In both designs, the hammers with hammer heads at the rear are mounted on hammer rails. The jacks and backchecks are fixed in the same relative positions in the back half of the key levers. The damper arrangements are alike. The damper pads above the strings are lifted when the vertical damper rods are raised by the back ends of the key levers.

There is a major difference, however, in the escapement systems. Cristofori's intermediate lever has been omitted in the Backers action and the jack presses upward directly against the underside of the hammer butt. When the key is depressed, let-off takes place as the jack is pushed out from under the hammer butt by the adjustable let-off button on the head of a screw placed in the inclined rail supporting the hammer rail. The spring at the base of the jack exerts its force toward the rear to assist in escapement. While the key is held down, the let-off button holds the jack far enough down to allow the hammer to drop into place. When the key falls back into rest, the jack drops by gravity into its initial position. The Backers action was simpler, sturdier and easier to build than the Cristofori action. Comparing it to the Zumpe action which presented difficult control of touch, the Backers action was a significiant improvement. The Zumpe action requires firm, distinct finger motion and allows few variations between loud and soft. In the Backers action, the adjustable let-off button gives finer control of the hammer force. However, very soft playing is not possible because a very light touch will not give the hammer enough energy to strike the string.

John Joseph Merlin (1735-1803), a contemporary of Stodart, was another of the few builders in London with an interest in grand-type pianos. Merlin had come to London from Brussels around 1760. Not only a builder of musical instruments, Merlin was a mechanical wizard who invented a wide variety of unusual mechanical novelties such as a mechanical tea-table, a self-propelled wheel chair, a wool turning engine and others. In 1774, he received a patent for a "compound harpsichord" which contained a piano action as well as jacks and quills. An instrument inscribed "Josephus Merlin...Forte Piano No. 80 Londini 1780" surviving in a museum in Munich has a single keyboard for playing the three sets of jacks or the piano action with down-striking hammers installed above the strings. There are four sets of strings arranged on three bridges. Two sets are in unison, one set is an octave higher and the remaining set is an octave lower in pitch. The instrument has a recording device in which a continuous belt of paper is advanced by clockwork while 61 pencils activated by trackers record the duration of each note. The resulting record resembles a player piano roll.

Although his harpsichord piano was an impractical instrument, Merlin contributed some ideas that advanced piano design. His 1774 patent describes the first piano una corda shift operated by a foot pedal. He also designed a new type of hammer-head composed of several layers of leather under a cloth outer coating. Many other builders still used the smaller leather-covered wooden blocks or hollow roll hammers of Cristofori. Merlin was the first builder to extend the compass of the piano keyboard. He may have built a six-octave piano for Burnewy as early as 1777.

Few grand pianos were built in England before the 1780s. Broadwood did not start to build grands until 1781. Meanwhile, the demand for square pianos had grown at a rapid pace during the 1770's. By the end of the decade there were at least 12 to 15 firms in London including Kirkman, Broadwood's main competitor, building and selling pianos. These were businesses established by British- as well as German-trained craftsmen.■

Calendar Of Coming Events

Date	Event
Jan. 8-9, 1988	**Arizona State Conference** Aztec Inn, Tucson Arizona Mark Peele; 2204 E. 6th St.; Tucson, AZ 85719 (602) 362-4528
Feb. 12-14, 1988	**California State Conference** Torrance Marriott, Torrance, CA Anthony Pascone; 895 N. Calle Circulo; Camarillo, CA 93010; (805) 482-3513
Mar. 11-13, 1988	**South Central Regional Spring Seminar** Fayetteville, AR Denele Campbell; 541 W. Meadow; Fayetteville, AR 72701; (501) 443-2457
Mar. 18-20, 1988	**Central West Regional Seminar** Wichita, KS Marty Hess; 4031 N. Harding; Wichita, KS 67220; (316) 744-0564
April 8-10, 1988	**New England Regional Conference** Holiday Crowne Plaza, Newport, RI Kirk Russell; 13 Liberty Street; Wakefield, RI 02879, (401) 783-1966
April 15-17, 1988	**Pennsylvania State Conference** Sheraton, Altoona, PA Fred Fornwalt; 1333 Logan Blvd.; Altoona, PA 16602; (814) 942-1489
April 22-24, 1988	**Northern Illinois Seminar** Northern Illinois University, DeKalb, IL Jack Greenfield; 259 Riverside Drive; Northfield, IL 60093; (312) 446-9193
April 29 - May 1, 1988	**Michigan State Conference** Detroit, MI Hugh Gulledge; 175 Degross; Walled Lake, MI 48088; (313) 669-4325
July 18-22, 1988	***31st Annual Piano Technician Guild Convention & Institute*** Adams Mark Hotel, St. Louis, MO Home Office: 9140 Ward Parkway, Kansas City, MO 64114, (816) 444-3500.

Membership

Helping People New To The Guild

Ronald L. Berry
Vice President

Recently our chapter has had several membership inquiries from aspiring technicians in our area. This has given me a chance to think what itmust be like for them to be people who might be interested in joining us. Unfortunately, I think we as Guild members sometimes leave the impression that we are not looking for new members. We tend to be skeptical of how serious a person is about becoming a piano technician. We tend to assume the person doesn't know how to tune or repair pianos. We tend to leave all the work of getting into our group to the person who is on the outside looking in, trying to decide if it is worth it to become a member of the Piano Technicians Guild.

A little portion of this attitude tends to do some good by discouraging those who merely use up our time without truly being interested in becoming a technician. However, I wonder if most of us don't go too far in "discouraging" people from joining the Guild.

Each of us came in from the outside. All of our great PTG mentors, instructors, designers, concert tuners, and technicians *par excellence* were once nonmembers. No one is born into the Guild. If we could identify among the novice nonmembers those who will become tomorrow's leaders, we could help those people along and urge them to join while letting the others fend for themselves. That's not possible.

Besides, each of us as members has an opportunity to help develop the potential of tomorrow's top technicians. Perhaps the help and encouragement we give to a new member who doesn't yet have the proper skills will be the turning point for that person.

Sometimes members who are not chapter officials shrink from the responsibility of cultivating new members. If someone inquires about Guild membership, that person is referred at once to the chapter officers without any words of explanation or encouragement from the Guild member who first received the inquiry. When a visitor comes to a meeting for the first time to learn about the Guild we should each assume part of the task of talking to that person and sharing information about the Guild and the piano tuning profession.

If we keep in mind that we want more members because they will strengthen and inspire our organization, we will be more likely to be ready to talk about the Guild and to welcome inquiries about membership. What helps the organization to be better will in turn help each of us to be better. ■

New Members During October 1987

REGION 1

Western Massachusetts – 010

Catherine Carulli
Box 233 Locks Pond Road
Shutesbury, MA 01072

Boston – 021

John Cavanaugh
84 Prince Street, ε3C
Boston, MA 02113

Gerald Johnston
41 Goodale Street
Haverhill, MA 01830

Julia Lee
145 Galen Street
Watertown, MA 02172

James Maggio
38 Montvale Avenue
Stoneham, MA 02180

RhodeIsland – 029

Ralph DiRobbio Jr.
663 Orleans Court
Warwick, RI 02886

New Hampshire – 031

Keena Keel
1 Townhouse Lane, Apt. 6
Acton, MA 01720

Montreal–M060

Rejean Doyon
5 Beauregard
Warwick, QC
Canada J0A 1M0

Toronto – 062

Theodore Gerber
7 York Street
Orangeville, ON
Canada L9W 1L7

LehighValley,180

David Perkins
18 Grant Avenue
Flemington, NJ 08822

Reading-Lancaster–190

Clyde Hollinger
2060 Main Street
Rothsville, PA 17543

REGION 2

Western North Carolina – 296

John Hindman
603 Watford Avenue
Greenwood, SC 29646

Edward Niedzwiecki
PO Box 2359
Asheville, NC 28802

SouthwestFlorida – 337

Robert Horton
15 New Venus Avenue
Clearwater, FL 34615

REGION 3

Dallas – 752

Al Williams
500 East Gandy
Denison, TX 75020

Houston, – 771

Tai-Yu Chuang
9610 Ravensworth
Houston, TX 77031

REGION 4

Cincinnati – 452

Donald Kutchback
3500 Bookmark Place
Maineville, OH 45039-9

Detroit-Windsor – 481

Daniel Frank
9601 Horseshoe Bend
Dexter, MI 48130

Milwaukee – 532

Matthew Smith
3126 North Washington
Watertown, WI 53094

Waukegan – 600

Barbara Barasa
326 Fair
Sycamore, IL 60178

Chicago – 601

Ronald Johnson
4641 Paulina, 307
Chicago, IL 60640

REGION 5

St. Louis – 631

John Frescoln
10242 Breckenridge
St. Ann, MO 63074

REGION 6

Utah Valley – 846

Lucinda Dove
2150 S. Balboa Way, 15
St. George, UT 84770

Los Angeles – 901

Horace Greeley
PO Box 8
Arrowbear Lake, CA 92382-0

Pomona Valley – 917

Robert Simmons
210 N. Beechwood, Apt. 348
Rialto, CA 92376

San Francisco – 941

Judi Edwards
943 Pacific Avenue
Alameda, CA 94510

Golden Gate – 945

Brian Voll
558 Canyon Road
Redwood, CA 94062

Alaska – 996

Dan McElrath
7414 Linden Drive
Anchorage, AK 99502

NEW AFFILIATES

Christian Glaettli
1H Forem Schaffhausen
555 Schleithein SH
Switzerland

Claudio Zaniolo
Via Carlo Pasta 4
Chiasso 6830
Switzerland

Reinstated Members

REGION 1

Wilmington – 198

James Ficca (Assoc.)
1801 N. Harrison Avenue
Wilmington, DE 19808

REGION 2

Atlanta – 301

Michael Hedden Jr. (Assoc.)
Rt. 1, Box 418-18F
Gainesville, GA 30501

Reclassifications

REGION 1

Boston – 021

John Cavanaugh
84 Prince Street, 3C
Boston, MA 02113

Erie – 165

Bruce Fellows
R1
Little Valley, NY 14755

Robert Sadowski
1038 West Ninth
Erie, PA 16502

REGION 2

Washington, D.C. – 201

Donald Chandler
280 E. Hilltop Lane
Annapolis, MD 21403

REGION 6

San Francisco – 941

Judi Edwards
943 Pacific Avenue
Alameda, CA 94501

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Executive Director/Editor

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The Auxiliary Exchange

President's Message

Marshall Hawkins has done it again... What? Proved to be "The Great Communicator. While reading his article in the September *Journal*, I immediately recognized the "catch word" as the electricity I felt while attending the planning meeting in St. Louis this month (September). **Momentum!** He was also correct in his statement that **"Everyone has his or her own definition of the word."** Within the last two days, I have asked four people their definition of the word, without the benefit of Webster. One person said it meant **"forward progress,"** another said **"the force of an object,"** a baseball player said **the word momentum was synonymous with enthusiasm..." a team must gain momentum (enthusiasm) to win tomorrow's game, next week's game, with an eye to the ultimate world series."** My 10-year-old grandson said **"It's like a ball rolling down a hill, faster and faster."**

All of the above could be summed up in one word **"Toronto!"** I would be hard-put to select one, including Mr. Webster, to define what the convention in **St. Louis** will be. The progress is there, the object is there, the enthusiasm is there and the ball is rolling. All through the efforts of the Institute Director, the Host Chapter, PTG, PTGA, the Piano Manufacturers and the Exhibitors!

The other "catch phrase" I noted was "1188 in 88." I wasn't too certain about the sound of that one. Upon reflection, I like it, as it sounds like a challenge, except for the lack of a question mark. It is obvious they, the members, like a challenge, they attend to meet that challenge of upgrading their skills to be the best possible technician. You, the spouses, attend to support your technician, even if it means "tightening the purse-strings" during the year...believe me, this is also a challenge. How nice to have the power to edit and we can, by not allowing "1188 in 88" to have a question mark.

It can be a reality, with an exclamation point! All we need is you.

– Ginger Bryant

Merry Christmas
Wesolych Swiat!

In Memoriam

The reason firm, the temperate will,
Endurance, foresight, strength and skill;
A perfect woman, nobly plann'd
To warn, to comfort and command.

The words of the poet written long ago might well apply to our Marge Evans, a gracious lady, loving wife, devoted mother to Linda and Timothy, proud of her three grandchildren and ever close to her brother Robert Steinman. Born in Litchfield, MN, on Jan. 16, 1916, Marge moved west as a young adult to pursue music studies at UCLA and locate employment as a nurse/receptionist/secretary in a doctor's office. Her skills developed there to be used later for the benefit of the Guild and the Auxiliary. All of us knew Marge as a doer, compassionate individual and most kind. A faithful member of her church, she gave generously of her time carrying out many responsibilities there.

Those of us who traveled with Marge and Dan on foreign trips they planned know that Marge was an excellent traveling companion and an able assistant to Dan in the overall organization. The Los Angeles Auxiliary has suffered a great loss, as Marge was a talented, loyal, dependable member for some 20 years. She served two two-year terms as president of the chapter, several times as secretary, and a number of times as a convention delgate. We have lost a true friend and a sister whose memory we shall always cherish.

– Pauline Miller

The Legend Of The Poinsetta

On a Christmas Eve long ago, Pepita was sad. This little Mexican girl wanted more than anything to give a fine present to the Christ child at the church service that evening. But she was very poor and had no gift. As she walked sorrowfully to church with her cousin Pedro, he tried to console her.

"Pepita, he said, "I am certain that even the most humble gift, given in love, will be acceptable in his eyes." So Pepita gathered a bouquet of common weeds from the roadside and entered the church. As she approached the alter, her spirits lifted. She forgot the humbleness of her gift as she placed it tenderly at the feet of the Christ child...and there was a miracle! Pepita's insignificant weeds burst into brilliant bloom. They were called *Fores de Noche* (Flowers of the Holy Night). We call them poinsettas.

The poinsetta is a native plant of Mexico and Central America, having various lobed leaves in brilliant scarlet, pink, whte or variegated pink bracts. It is used as a decoration in many homes and churches at Christmastime.

– Kathryn Snyder

Felices Pascuas!
Buon Natale!

A Reminder...

Dues are due. At the Council in Toronto, the dues were raised to $10. A donation to the **scholarship fund** is always welcome. Please check the dues notice or the Guild directory to make sure I have your correct address.

– Kathryn Snyder

Froehliche Weihnachten!
Mele Kalikimaka!

We cannot have a Yuletide season without some sort of "review" about the holiday, or a puzzle, quiz, songfest or party. All an editor can do is recall traditions, poems and songs that have been prompted by the article on the poinsetta submitted by Kathryn Snyder.

Christmas was not always a holiday – in 19th-century England, Bob Cratchit had to work and so did everyone else. But unlike Ebenezer Scrooge, some employers allowed their workers to leave for home about 4 p.m. From that Dickens "Christmas Story", do you recall how many children were in the Cratchit family? There were six Martha, Peter, Belinda, a boy and girl not named, and Tim, whom we all remember.

Of course you all know that the tradition of the Christmas tree comes from Germany and that Joseph Mohr, who wrote the words for "Silent Night" needed a simple song which could be accompanied by violin or guitar since the organ in the church was broken.

It was on Christmas Day in 1776 that George Washington and his troops crossed the Delaware River into New Jersey and defeated 1,400 Hessians at Trenton. Most of the folk in New Jersey know this since there is an annual reenactment of that event that is well-reported in area newspapers.

Who knows the names of Santa's eight reindeer and the last line in the original version of "A Visit From St. Nicholas?" All the young parents and grand-parents, I'll bet. To Thomas Nast, the American cartoonist, we are indebted for the image of Santa Claus as we know him today and that illustration was first seen in 1863.

This writer's favorite Christmas piece is the letter of response drafted by Frank Church to eight-year-old Virginia O'Hanlon, who had written to the editor of the *New York Sun* and asked, "Is there a Santa Claus?" The story goes that when Mr. Church was given the assignment of answering the child's letter, he protested but finally with reluctance and resignation typed a reply that has been reprinted more millions of times than any other newspaper article ever written. The editorial was written in 1897 Virginia was asking because some of her friends were saying there is no Santa Claus. "Papa says 'If you see it in the Sun, it's so.'"

It has been a tradition in many newspaper publishing companies to reprint that editorial in their December 24 issue. Look for it and find some of these excerpted passages. "Virginia, your little friends are wrong. Yes, Virginia, there is a Santa Claus. He exists as certainly as love and generosity and devotion exist...Alas how dreary would be the world if there were no Santa Claus! It would be as dreary as if there were no Virginias. Not believe in Santa Claus? You might as well not believe in fairies. The most real things in the world are those that neither children nor men can see. Did you ever see fairies dancing on the lawn? Of course not, but that's no proof that they were not there. Nobody can conceive or imagine all the wonders there are unseen and unseeable in the world.

No Santa Claus? Thank God He lives, and he lives forever. A thousand years from now, Virginia, nay, ten times ten thousand years from now, he will continue to make glad the heart of childhood."

– Agnes Huether

Joyeux Noel!
Kin Ge Shinnen!

In behalf of all the officers and members of the Auxiliary, we extend to all the greetings of the season and our best wishes for a happy and healthy New Year.

– Agnes Huether

Khrystos Rozhdaietia!
Frrolijke Kerstmis!

From the land of Edna Ferber, Harry Houdini, Frank Lloyd Wright, Spencer Tracy and TV actress/contemporary Tyne Daly, comes our Judy White. Born and reared in the rural country of west-central Wisconsin, Judy Schweitzer married Charles White shortly after she received her BA degree in 1965. She completed a double major: elementary education grades 1-6 (the tough years) and comprehensive music, grades 1-12. Judy's son Patrick and daughter Kathleen are currently away at college so she has a fairly easy time of it these days. This "free time" allows her to give even more time to her church, community and professional memberships. Recently Judy was nominated to "Who's Who" in America, a well-merited recognition for her services as treasurer of the local United Education Association and chairman of Gifted/Talented Committee.

Judy loves sewing, knitting, crocheting and tailoring (does anyone have items of clothing that need to be taken up, down, in or out? Judy will be in St. Louis!). Judy's hobbies are swimming, walking and golf. Although we don't have a picture of Judy, she is about 5'5", of slim build, with dark brown hair and an engaging smile. She has a warm and outgoing personality. On the serious side of Judy, she is a dedicated collector of Tom Wilson's brainchild "Ziggy" cartoons. Maybe Tom Wilson is from Wisconsin and Judy will tell us how there is a bit of Ziggy in all of us. She has employed this little cartoon character in her teaching role and has had a good degree of success with it.

Despite all her talent and skill, Judy demurred when asked to write a brief biography. This is well-understood. As a prerequisite for graduate students in social work, it is one of the most difficult hurdles to clear.

– Agnes Huether

Feliz Natal!
Tin Hao Nian!

New Members

Shirlee Bailey (Benjamin)
1605 N. Willard
Altus, OK 73521

Susan Lee Birch (James)
56 Nashville Rd.
Bethel, CT 06801

Carol Bussell (Robert)
224 West Bant Road
Indianapolis, IN 46217

Nancy Carnicom (Ronald)
2685 Ridge Road
Norwalk, OH 44857

Pat Chamberlain (Millard)
6989 Convent Street
Creghan, NY 13327

Liz Cowan (Ken)
Belgrave, Ont., Canada

Anne Diehl (Edwin)
1213 Tilghman Street
Allentown, PA 18102

Frances Goodwin (Garland)
46 Marrow Street
Hampton, VA 23669

Renee Farley (Timothy)
22 N. Kenosha Drive
Madison, WI 53705

LaVonne Harris (Ronald)
175 Park Street
Chelsea, MI 48118

Exchange Editor:
Agnes Huether
34 Jacklin Court
Clifton, NJ 07012

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Notice:

Effective with the January 1988 issue of the Journal, classified advertising rates will increase to 35 cents per word. There is a $7.50 minimum charge per advertisement. Full payment must accompany each insertion request. Closing date for ads is six weeks prior to the first of the month of publication.

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

Send check or money order (U.S. funds, please) made payable to Piano Technicians Journal, 9140 Ward Parkway, Kansas City, MO 64114.

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SIGHT-O-TUNER SERVICE. Improve the accuracy of your tunings with a correctly calibrated SOT. Also do repairs and modifications. **Richard Weinberger, 18818 — 142nd Drive, Sun City West, AZ 85375. (602) 583-0083.**

FOR SALE CONN STROBOTUNER – ST8. Excellent condition **(901)-285-2516, Charles A. Wilson, 1841 Kit Carson, Dyersburg, Tenn. 38024**

Index of Display Advertisers

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ONE HAZELTON BROS. SQ. GRAND, – #9276 – refinished, restrung. Antique Steinway Sq. Grand – needs some work – #33375 – E3.Chickering Sq. Grand, Rosewood, original ivory, #58048. Steger regular 5' 5" restrung, fruitwood finish, #23663. Zuckerman Harpsichord – kit – complete with instructions and extra wire. No reasonable offer refused **Ran Boggs, 402 Mt. Carmel Road, Vancleve, KY 41385-9701 Telephone – (606) 666-5790.**

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52 Piano keys recovered — .050 — $40.00. .060 — $45.00. .075 with fronts — $65.00. New sharps — $30.00. Sharps refinished — $15.00. Keys rebushed — $45.00. New fronts — $20.00. Return freight paid with prepaid order. **Charles Wilson, 1841 Kit Carson, Dyersburg, Tenn. 38024.**

LIQUIDATION OF KEY BUSHING CAULS! Full sets only of brass cauls in all six sizes until stock is depleted, now only $39.00 each plus shipping. Also, amazing new tool: Electric Key Bushing Iron allows you to completely fit set of keys to frame in less than ten minutes and reduces friction too! **Key Bushing Supply, Box 56, Kingston, NH 03848 (603) 642-3633.**

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ATTENTION CTE'S AND TRAINEES: Tuning Exam set up (complete) for sale. Includes SOT, TI 59 and Printer (both completely rebuilt by Texas Instruments). All used less than 20 hours. $450 or offer for all. **Tom Lowell, 2360 Galls Cr. Rd., Gold Hill, OR 97525.**

THE PIANO BOOK A Guide To Buying A New Or Used Piano, by Larry Fine, RTT. Candid brand new reviews by technicians, sales gimmicks exposed, how to find and inspect a used piano, a complete list of old Steinway models compiled from archives, much more. Useful for both technician and customer. "The most comprehensive guide yet published" – from the Foreword by Keith Jarrett. "A thorough job of presenting information that the public should have had available long ago – Arthur Reblitz. "The best-researched, most accurate, most honest writing about pianos I have read – Frank Hanson. 200 pages, 81/2x11, 100 illustrations. Postpaid $16.95 paperback, $26.95 signed hardcover. Mass. residents add 5%. **Brookside Press, Dept. J1, P.O. Box 178, Jamaica Plain, MA 02130.**

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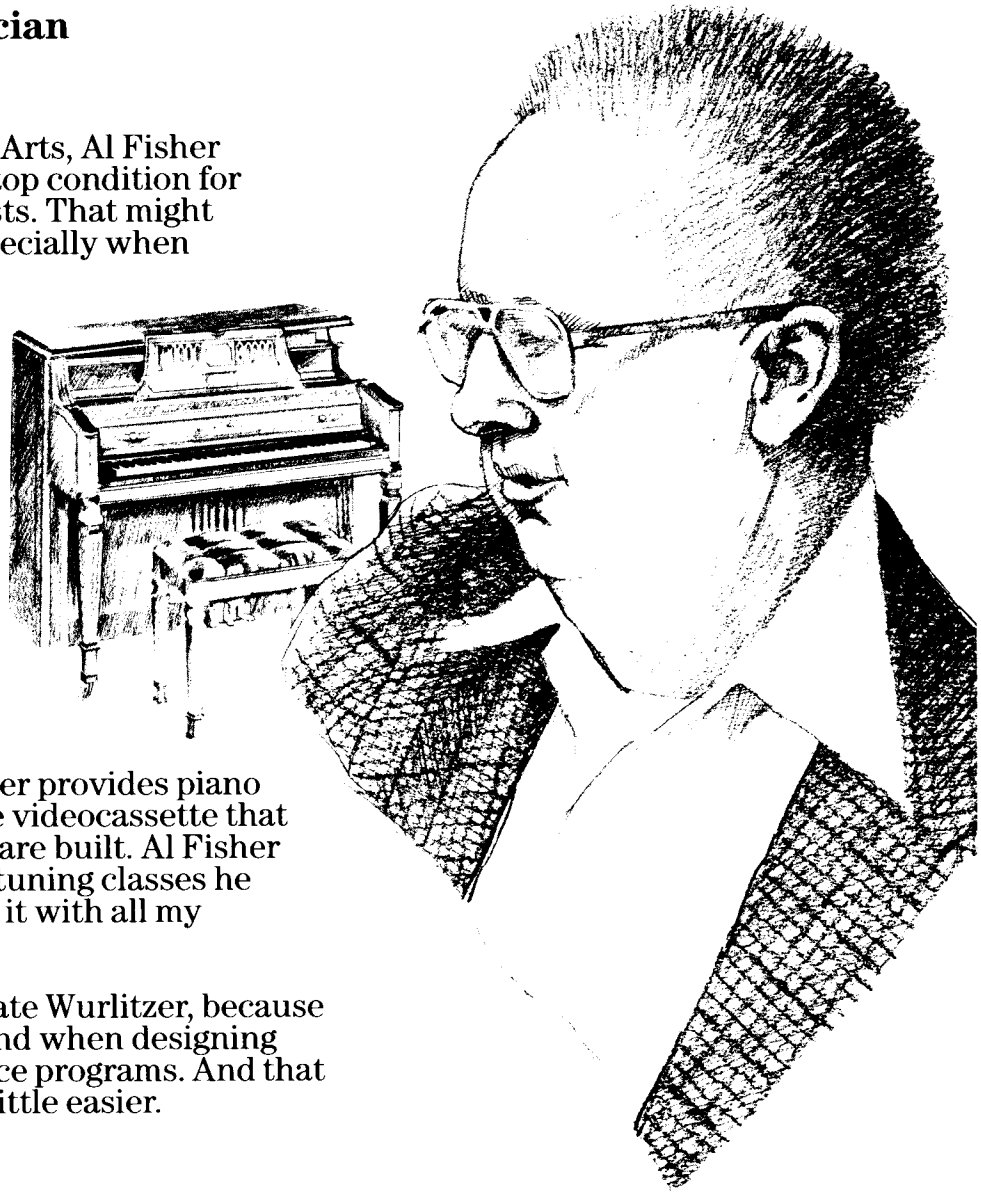

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People like Al Fisher appreciate Wurlitzer, because we keep the technician in mind when designing pianos and establishing service programs. And that makes the technician's job a little easier.

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December **UPDATE** 1987

Published Monthly For Members Of The Piano Technicians Guild, Inc.

Temporary Health Policy Offered

A major medical and dental insurance policy which had been marketed through the Guild by Sunset Insurance Associates of Seattle, WA, for approximately 20 years was canceled by the carrier, Pacific Heritage Assurance Co., effective at the end of November. The cancellation affected some 275 Guild members in all parts of the country.

When news that the policy had been canceled and that Sunset would not be able to offer ongoing replacement coverage, the Guild:

1. Instituted a nationwide search, working with a number of insurance agents, to find a carrier to pick up the existing policy. Agents in California, Connecticut, Georgia, Kansas, Missouri, New York, Ohio, Oregon, and Texas were consulted, with negative results because of the existing plan's unfavorable loss history.
2. Retained an attorney specializing in association and insurance law to review the case to ensure that the rights of the Guild and its members are protected.
3. Agreed to allow the Security Financial Group of Lewisville, TX, to market a temporary individual policy to those who had been covered under the PHA program. This policy will provide protection to those individuals through February 1988; however, it will not cover pre-existing conditions. Nor does it offer dental or supplementary life insurance coverage. A letter from President M.B. Hawkins and a brochure on the temporary policy were sent to those who had been covered under the PHA plan. Those who have questions about the temporary policy may contact the Security Financial Group at 1-800-332-3870.

The Guild's Board of Directors will review the situation and make a decision at its January 1988 meeting in St. Louis regarding the offering of any new program of health insurance coverage.

Hall of Fame Award Nominations Sought

Bob Russell
Chairman, Awards Committee

Each year the Piano Technicians Guild honors people who have shared their talent, time, and loyalty to the piano technician's profession so that we have what we have today, a great guild.

Their time, inspiration and talent was given over a *number of years* and nationally. PTG should always be able to feel their positive fingerprint of membership.

Every chapter and guild member is give a chance to nominate a guild member who has nationally earned this "Hall of Fame" honor.

Please send your nominations to:

Bob Russell
1414 Lander Road
Mayfield Heights, Oh 44124

The committee will select PTG's next Hall of Fame winner, taking into consideration your nominations.

Dates And Deadlines

Dec. 5, 1987
Detroit Test Center
Hugh Gulledge (313) 669-4325

Dec. 31, 1987
Deadline for submitting awards nominations
Bob Russell, 1414 Lander Rd., Mayfield Hts., OH 44124

Jan. 1, 1988
1988 membership fees due

Jan. 22-23, 1988
Board of Directors Meeting
St. Louis, MO

Feb. 1, 1988
1988 officer nominations due
Susan Graham, 2967 Madeline St., Oakland, CA 94602
Proposed bylaws amendments due
Sharla Kistler, RD #8, Box 461, Allentown, PA 18104

Feb. 6-7, 1988
CTE Training Seminar
Tacoma, WA
Michael Reiter (206) 847-6009

Mar. 5, 1988
Detroit Test Center
Hugh Gulledge (313) 669-4325

March 25-26
RTT Tuning & Technical Examinations (Pacific Northwest Exam. Board) Seattle, WA

April 15-17, 1988
CTE Recertification
Pennsylvania State Conference
Chuck Erbsmehl (716) 759-6126

April 28-May 1, 1988
CTE Recertification
Michigan State Conference
Steve Hornbeck (313) 627-6128

June 18-19, 1988
RTT Tuning & Technical Examinations (Pacific Northwest Exam. Board) Tacoma, WA

Protracted Adversity

M.B. Hawkins
President

Some years ago, I recall reading a book titled "Protracted Conflict." It talked about the world situation as it is related to the East-West conflict. Mentally reviewing some aspects of that book caused a rather vivid picture of our organization to come to mind. During the next few minutes, allow me to share some thoughts with you.

It has often been said that most progress is generally achieved when times are not so good. If one looks about, a positive case can be made based upon that statement. Looking back through the history of PTG, there have been many financial ups and downs. Playing our cards close to the table and being ever mindful of expenses versus income, we have managed to steer a conservative financial course which has managed to keep our books looking respectable. Not as great as we would like, mind you, but certainly not as bleak as they could be.

For the past four years, we have enjoyed seeing our financial attitude take a turn for the better. That does not mean that we are "out of the woods," or even on what one might call "easy street." But, it does mean that there has been a significant upturn. Continuing good financial management along with successful annual conventions has not hurt in the least. When things begin to improve and forward movement seems to be certain, you may be sure that the time is ripe for complacency to set in. The story of the frog who found himself in a pan of lukewarm water states the situation well. The warm water felt so good he could not help but stretch out and relax. Little did he know there was a low flame under this pan of water which caused it to become increasingly warmer, even hot, much to his detriment. As the frog continued to relax, he became sleepy and when he dozed off for a nap, that was the end of that frog. End.

We in PTG do not want to lull ourselves into thinking all is well, that all is fine, everything is OK; there is still much work to be done. As a matter of fact, we are just beginning to scratch the surface. As our membership increases, our financial base broadens, which allows us to become involved in a greater number of things beneficial to and for our membership. As membership becomes more supportive of our annual institute, which is for the individual's technical improvement, our financial base becomes even broader. Can you imagine the ramifications of just one-half of our membership attending our annual convention/institute? I can, and I believe we can avoid unknowingly contributing to a protracted adversity. That's what we do when we knowingly fail to take advantage of all that is available to us as members.

The benefits are twofold. Personally, you gain from the increased knowledge acquired, which in turn increases your efficiency as a technician. And on the other hand, the interaction with others in the field can in no way be surpassed. The friendships developed are invaluable. Secondly, *your* organization benefits from your presence and input as well as financially when you attend the annual convention. The benefits come back to you in a number of ways. Additional funding allows for the expansion of programs geared to enhance the status of the technician in numerous ways.

So...let's not contribute to a protracted adversity. Let's plan ahead to when we can gather under the

Newsletters — Binding Us Together

Dick Beaton
Chairman, Chapter Newsletter Committee

Your newsletter committee this year is Dick Beaton, chairman, Helena, MT; Kathleen Voss, Racine, WI; and a welcome newcomer, Lucy Urlacher, Kansas City, MO.

In the past year I have received an increasing number of newsletters from all over the country. Some months ago, our President Marshall Hawkins devoted his monthly message in the *Journal* to the importance of chapter newsletters. One of the important elements that binds us together as a unique organization is communication with each other. We do this in several ways: chapter meetings, regional and local seminars, the annual convention, and newsletters.

There are some really fine and professionally done newsletters coming out of our larger chapters, but there are also excellent newsletters coming from smaller chapters. All of them combine to do one important thing...communicate!

Most newsletters contain a technical column. This can be anything from a favorite temperament to a widget invented by a member to make a tough job easier. Most newsletter editors take increasing and important items from another newsletter and use them to pass on to those on their mailing list.

If you chapter needs help in getting a newsletter started, help is at hand. You can get a copy of any newsletter. I can send you a list of those I receive. Some

Continued on next page

Chapter Management And Chapter Achievement Committee

Webb Phillips
Chairman, Chapter Management And Achievement Committee

Our primary function is to develop programs by which chapter officers can improve and share their expertise and skills at chapter management with officers from other chapters and to grade and present awards in recognition of outstanding efforts and activities.

Your monthly reports and newsletters are important to this committee. The important reasons are those which are important to you. Your reports provide the means for planning your activities as well as being a valuable source of information and guidelines for other chapters. It helps you pinpoint what you need to accomplish for better programs.

Many persons have worked diligently by concentrating their efforts on small, seemingly unproductive projects. The effort for the return is often great, but the experience broadens, causing us to seek larger and more profitable projects. Don't be reluctant to get your feet wet.

We realize that a small chapter of 10 persons has limited resources, but many are more productive than larger chapters. Consider our efforts something like a funnel — you can't expect more out of the bottom than you put in the top. Many chapters have not entered the arena. Each region now has a director who is dedicated to the success of this entire program. They are eager to have your chapter participate, take a leadership role and be an award winner.

We fall in procrastination traps and we think we stand still. This is not true. You are going either forward or backward. Nothing is more wasteful than the human potential that is lost when we become satisfied with a minimum performance, when greater achievement is possible.

When we are not moving forward, a significant share of the problem lies with the all-too-human tendency to relax after any extra effort has been exerted. Continued effort is needed.

Our greatest asset is each other and our ability to rise to the occasion. Remember, progress is not made by contented people.

After the awards are presented at annual conventions, I'm always asked by individuals how their chapter can win one of these awards. It's easy — make sure your officers are responding to the requests of this committee.

First, second, third and honorable mention awards will be presented annually to chapters according to size. The size categories are: small, 1-10 members; medium, 11-25; intermediate, 26-49; and large, 50 or more.

These are some of the criteria used in judging for awards:

1. Turning in non-member names.
2. Adding new members.
3. Newsletter (very important).
4. Quality of newsletter.
5. Consistency of monthly reports to Chapter Management and Achievement Committee.
6. Number of articles for chapter update.
7. Holding meetings.
8. Quorum.
9. Board meeting.
10. Guests at meetings — one point each.
11. Number of committee reports.
12. Upgrading members (very important).
13. Technical (chapter members).
14. Technical (outside source).
15. Members attending other chapter meetings.
16. Number of members participating in other chapter technicals.
17. Chapter projects and number of hours.
18. Community projects.
19. Exhibit at local functions.
20. New programs.
21. Field trips.
22. New CTE.

We tend to blame our officers for failure of programs. Many times this is true but now you can see what is needed from your chapter. Jump in and give your officers your support.

Over the last five years, those chapters participating in the monthly report have increased in number to just over 50 percent. I don't understand why 100 percent are not reporting. Let's make it 100 percent in '87 and '88. Your area regional directors have specific assignments but will customize to fit the needs of your particular area, and help you be an award winner. But don't forget that funnel — you can't get more out of the bottom than you put in the top.

Let's all start now — let us know your needs and ideas. Get that monthly report in every month, as well as your newsletter, to both your regional director and to me.

Chapter Newsletters...

chapters charge a fee for a subscription to defray the cost of publication and mailing. Actually, all you need is to get a commitment from a member to be the editor and let him use his or her own imagination. Some chapters publish every month and include the location and agenda for the next meeting, personal notes of interest and even a little humor to top it all off.

If you haven't already, how about getting your feet wet? It can be a rewarding experience.

Chapter Notes...

Maine

On August 15, the Maine Chapter hosted a one-day seminar and lobster bake. Following an open house and technical presentation at Rice's Piano Shop, Inc., those attending (approximately 20 brave souls) gathered at a private beach for lobster, clams, corn-on-the-cob, salad and blueberry cobbler. The weather was perfect and all agreed it ought to become an annual event. Plans are now in the works for a winter gala, possibly a ski weekend/seminar. Look for details in the "Coming Events" section of the *Journal.*

Chapter Notes

A Compendium Of News And Opinion From Chapter Newsletters And Officers' Reports

Oklahoma

As I sit here on the floor watching repairs being made on a grand piano by a fellow member, I became aware of the immense value in associating with others of like interest.

Where else can you learn and discover more about who you are and what you are doing than by being with someone who counts. Communicating and sharing your life's chosen work with others on the same path can only benefit one who recognizes this fact and acts on this knowledge.

Not choosing to participate potentially means not choosing to grow. Not choosing to grow means eventually certain stagnation. To grow or to stagnate...it seems to simple a choice to me, so easy a decision.

Each meeting time offers the opportunity to associate, to be with others of like interest, to learn and discover more, to participate. What your choice will be is obviously up to you. What mine is has already been made.

Keith McGavern

Central Illinois

I caught the feeling! What a wonderful experience for all who attended [the Toronto convention]. Aside from the spectacular social events...Everyone who soldiered their resources together were well refunded. The educational opportunities were abundant and almost overwhelming. We all left with a better understanding of our trade and ready to spread the news.

I believe the most valuable part of the convention was the camaraderie between all. It was evidence of the important role the Guild plays in our profession. We were family and not just associates watching out for our own behinds. Each person was vital to the organization and each played an integral part. It truly was a wonderful and challenging adventure. Next year we'll congregate in St. Louis; I hope that everyone will be able to attend and profit as much as I did.

Clark Hall

Kansas City

Ernie Preuitt was the chapter president in 1967. In putting together a chapter history, Ernie came across the meeting objectives he had in 1967. His objectives for the meetings 20 years ago were:

1. An interesting, fast and orderly business meeting.
2. Every man on a committee
3. All committees active (monthly reports)
4. Complete treasurer's report (income, disbursements, balance)
5. All minutes kept and read at each meeting.
6. Start on time.
    1. Main objective of meeting should be technical.
    2. Technical subjects planned well in advance.
    3. Technical programs announced to membership one month in advance — also put on notification card.

Now in 1987, we still have many of the same goals. With everyone's participation, I think that these goals are being reached. Once goals are being reached, there is no time for coasting. If we are not going forward, we will slip backward.

In going forward, I see the need for a Kansas City PTG Handbook. Thanks to the executive board, progress is being made in this direction.

The officers need to set goals and so does each member. Every RTT should plan to help administer the bench examination at least once in the course of the next two years. Every member, RTT and Associate, should plan to attend at least one or two meetings and a social event during the course of the year.

Each of us has a part to play in making the Kansas City Chapter one of the best in the country. We want to be the best because the strength of the chapter will be reflected in each member's individual business.

Lucy Urlacher

Editor's note: the Kansas City Chapter, which is celebrating its 25th anniversary, was featured on the front page of a regional tabloid section of the Kansas City Star. The lengthy article, which featured interviews with Urlacher and chapter member Paul Wolf, discussed the piano technician's work and the chapter's history.

New York City

"Every boost for PTG is a boost for its members and vice versa," wrote *Dan Dyer*. Because the chapter has over $5,000 in its treasury, most of which could be used for promotion, Dyer proposed a Yellow Pages advertising program with listings in the Manhattan, Queens and Brooklyn directories. RTTs not in those areas would be reimbursed by the chapter for listings in their own directory. PTG pamphlets would also be purchased by the chapter and distributed to those RTTs not participating in the advertising program. Associates, who would not benefit from the advertising program, would receive a rebate to encourage them to work toward becoming an RTT.

Our last technical consisted of two films from the PTG film library, ordered and shown for us by Karin Schmidtt. The first film, *Upright Action Restoration,* demonstrated clearly and unhurriedly the details of a hammer reshaping, felt and spring replacement and minor repairs, including a break-proof repair to a hammer shank. Did it ever occur to you that a technician might set an action on fire? The film showed it being done, and for a reason. (No, the action was not harmed.)

The second film, "The Time of Your Life," was based on Alan Lakein's book entitled *How to Get Control of Your Time and Your Life.* The narrrator of this film described and illustrated simple but effective steps to take in setting goals and working toward their realization. Significant were pointers on planning, prioritizing, coping with information overload and knowing when to ask yourself "Lakein's Question."

Sr. Marian A. Shelledy

Pittsburgh, PA

Recently discovered in the stacks of the local library, *The Marvelous Music Machine, a Story of the Piano* proves to be an insightful, correct and fun way for junior readers to understand the piano. Written by Mary Blocksma with the assistance of technicians Trudy Ferguson and L. Sue Bender and the people at Steinway & Sons, this book is filled with exceptional artwork by Mischa Richter.

The Marvelous Music Machine is thorough, even covering historic facts like the Cristofori keyboard and mentioning how Franz Liszt once went through three pianos in one concert because of strings breaking under the stress of his playing style.

We recommend this book heartily for technicians' children and also as a loaner to those promising young pianists and the teachers who make up the technician's clientele.

Mark Mateya