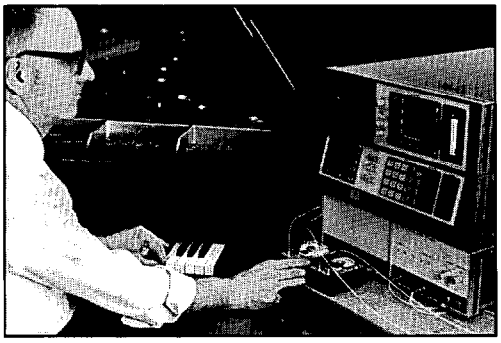
Piano Technicians Journal

July 1987

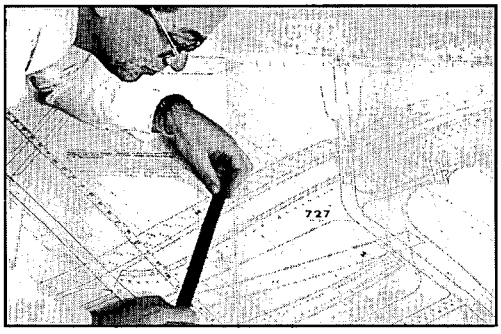
The Baldwin Piano...
You can see why it sounds better

At Baldwin we believe that perfect piano tone is an ideal shared with all those who design, build, play and service pianos. That's why continuous research in piano tone has always been one of our major commitments. And that's why our piano engineering and research department is one of the largest in the industry. And that's why you'll often find in every Baldwin piano innovations to improve piano tone introduced in our SD-10 concert grand.

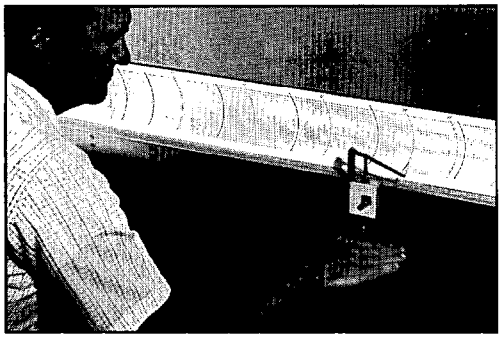
RESEARCH shows us why, as well as how, some things work better because we've taken a pioneering approach to piano improvement. We've substituted scientific testing and analysis for the unquestioning acceptance of traditional solutions. Some of the achievements that have resulted are treble termination bars (U.S. Pat. No. 3,477,331), the Acu-Just™ plate suspension system (U.S. Pat. Nos. 3,437,000 and 3,478,635), and vertically laminated bridges. Our patents are the most significant ones awarded for tonal improvements in grand piano tone in recent years.



ENGINEERING translates research into reality. To support our design innovations, we have produced our own testing and construction equipment and have expanded the use of precision tooling to insure that each Baldwin piano built will exactly match established standards of tone and performance. One example of this is a winding machine (U.S. Pat. No. 4,055,038) developed in connection with the SynchroTone™ Strings (U.S. Pat. No. 3,523,480).



MATERIAL STANDARDS insure continuing quality. For example, stringent standards for weight, dimension, taper, and hardness of hammer felt are established, and each sheet of felt is checked to be sure it meets those standards before it is accepted for production use.



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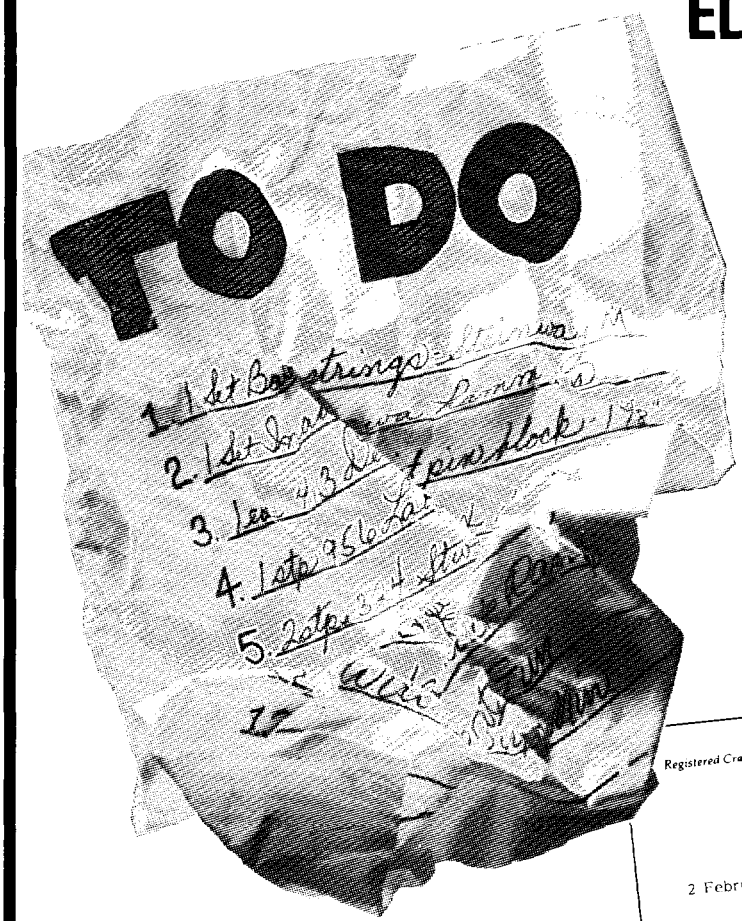

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2 February 19, 1987

General Manager
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The Piano Technicians Journal

July 1987

Official Publication Of The Piano Technicians Guild, Inc.

Volume 30
Number 7

IN THIS ISSUE...

PLUS...

THE COVER...

A J.B. Streicher fortepiano, #4218, dated 1848, walnut case, seven octaves, seven feet in length, restored and owned by Vancouver, BC, chapter member M.J. Van Prattenburg. Photo contributed by George Egerton, who also wrote the story on page 20.

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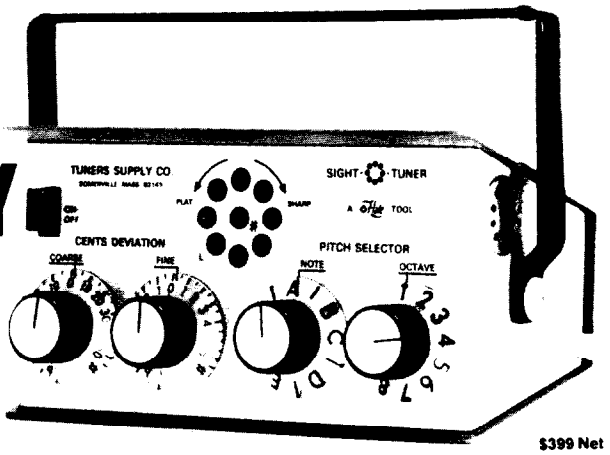

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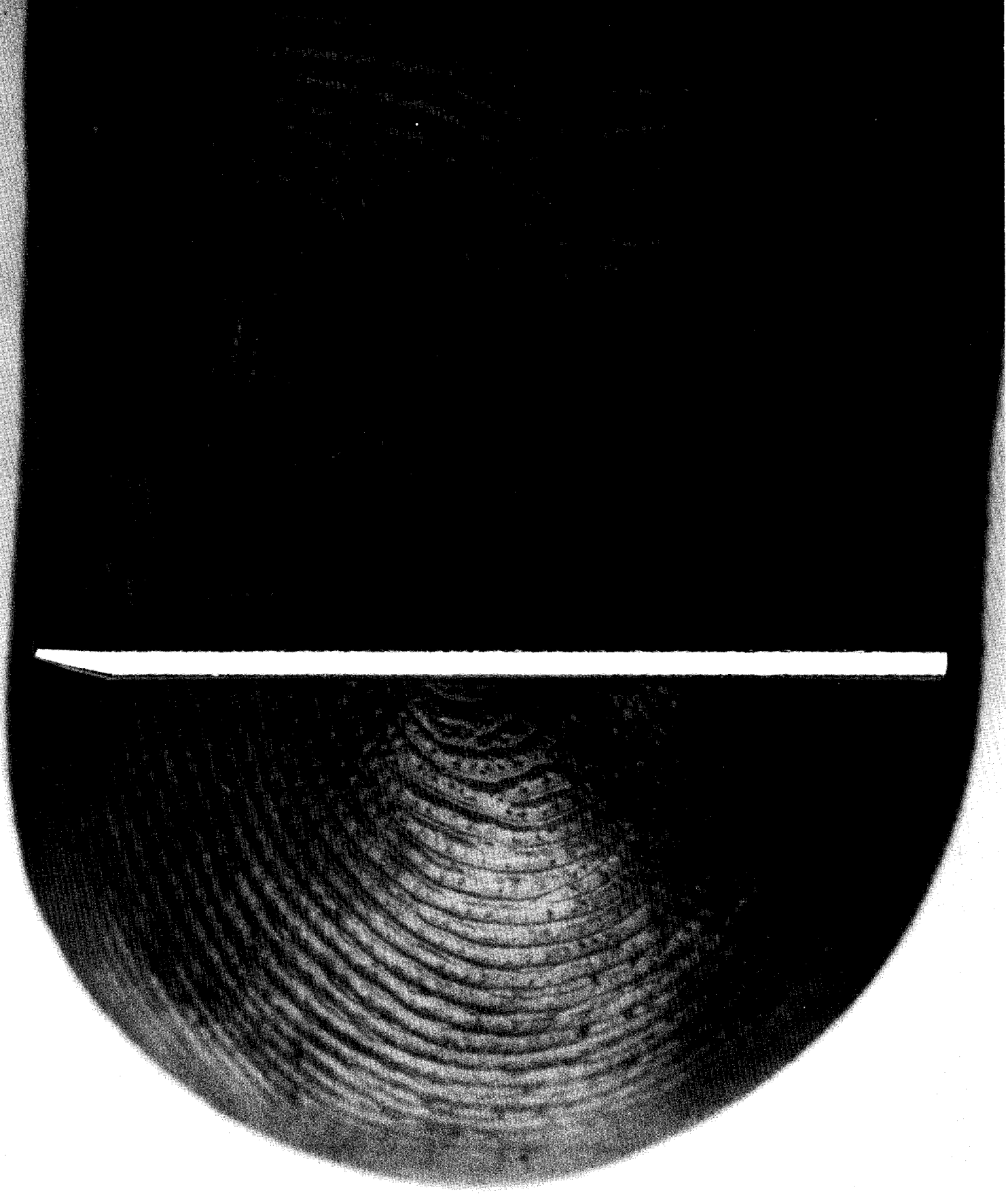

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President's Message

M. B. Hawkins
President

Board Dynamics

It is not easy for me to realize that an entire association year has passed. It seems like just a few months ago, that we were in Council, and by gosh, it's that time again. Although it seems to have passed quickly, it has been a most gratifying challenge as well as a healthy learning experience. I thank you for the opportunity.

Soon the Board of Directors will be different. Even if only one person changes, the board is different. The change brings in fresh ideas and a change in the mix of personalities so the chemistry always changes. Even though the continuity may be there, the mix is different. Therefore, the flow has to be adjusted accordingly. After a few years on the board, it becomes evident how one person changes the overall dynamic of this group. So what I am saying is be aware that this is a time of change. Be aware that you, the membership, placed your regional representative on the Board of Directors and your chapter's vote helped to shape the Board of Directors, no matter what its mix.

Be supportive and responsive, as well as tolerant. If all these qualities are present in our activities daily as well as at the chapter level, I believe our organizational thrust will begin anew on an even higher plane than previously experienced.

I hope to see the largest number ever present in Toronto for our 30th anniversary celebration, along with the special international emphasis IAPBT brings. Have a pleasant and safe summer.■

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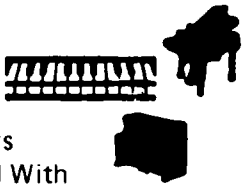

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From The Home Office

Larry Goldsmith
Executive Director

A Bit Of This, A Bit Of That

From last year's convention keynote speaker, Dr. Frank Wilson, comes a program for an international conference on music and child development July 7-11 in Denver. The symposium, which lists the Piano Technicians Guild Foundation as a supporter, follows Wilson's 1984 conference on the biology of music-making, which he discussed with us last July.

The 1987 conference includes sessions on "Children's Music in Non-Western Cultures," "Perceptual Psychology," "Psychomotor Development," "Current Concepts and Controversies in Childhood Musical Education," "Teaching the Gifted Child," and "Breaking 100 in Music: An Inquiry into the Nature of Self Percept of Musical Competence."

This conference, which has the support of most major organizations in music, explores (among other things) how and why people come to music. It makes an interesting contrast to a June 1 story in *USA Today* stating that sales of new baby grand pianos are up 10 percent. Who's buying them? That much-sought-after target of marketers everywhere, the yuppie.

Unfortunately, there's no guarantee that these status-seekers will ever really appreciate their purchases as musical instruments, much less devote any attention to maintaining them. "The new interest in ivory tickling has more to do with grand glamour than Gershwin," the story says, noting that "Seattle realtor Lynn Krinsky knows only a few chords, but they '*sound* better on a Steinway. And its looks just knock your socks off.'"

* * *

Some people never give up. And we're glad they don't.

From Ruth Pollard, who for years has given her all for the Guild, comes the following note that she is still looking out for technicians' interests:

"A month or so ago, I got in a pretty good piece of advertising for the Guild via radio. It had been suggested that one of Houston's main streets have its name changed. I called a talk program and told them I was against the change because two of our main streets had their names changed years before and some city mapmakers still had not got the message (Buffalo Drive to Allen Parkway — I still resent that change. Buffalo is distinctive. Anyone can have an Allen Parkway — and Lincoln to Montrose). I gave specific examples where the change made problems with my deliveries.

"Then: 'Several years ago, the Piano Technicians Guild wanted to change its logo. After they figured up how much it would cost Guild, chapters and members to change stationery, letterheads, billing heads, advertising, etc., etc., they decided they had a pretty good logo as it was.'"

* * *

One of the perennial highlights of Guild conventions is a performance by the "Barbershop Chorus," a come-one-come-all collection of light-hearted convention-goers brought together by their love for barbershop-type harmony. This year's chorus will be more active than ever, according to founder and director Larry Crabb.

In fact, a performance is scheduled for the convention opening session Monday evening, July 20. A rehearsal will be held Monday afternoon, so if you want to be a part of this fun-loving group, you should plan to get there early. Just consult the bulletin board near the convention registration desk for the actual time and place of the rehearsal. ■

The International Scene

Fred Odenheimer
Chairman, International Relations Committee

News From JPTA

With the recent mail came bulletin number 2 of the IAPBT newsletter, all in Japanese because it was the Japan Piano Technicians Association's turn to publish it. There are articles by Seiichi Utsunomiya, immediate past president of JPTA, and board member of IAPBT, Yukishigi Machida, president of JPTA, Tokuichi Ojima, JPTA official,and IAPBT Secretary Kazuyuki Ogio. There is also a technical article covering several pages. I am sure all these articles will be published in English in due time, perhaps in the *Journal* for the benefit of our membership.

Also in the mail came an invitation to attend the annual general meeting of IMIT, the Institute of Musical Instrument Technology, with an insert of the publication of a new dictionary that may be of interest to some of our members, namely *The New Grove Dictionary of Musical Instruments* published by MacMillan. It consists of three volumes and may make an interesting addition to one's library.

The Piano Technicians Guild and IAPBT conventions are now just about around the corner. For my wife and I, going to Toronto and seeing a bit of eastern Canada and Vermont is exciting, especially since this is new territory for us. Through the vehicle of conventions one cannot only acquire an immense amount of knowledge and become a better technician to serve one's clientele, but if the planning is right, one can see many parts of the U.S., Canada and indeed of the world. As I look back over some 40 years of learning and traveling, it has been a wonderful experience. Nobody should miss that exhilarating experience. It certainly helps us to forget misfortunes, disappointments and all the sad events that will mar our lives in short order. I hope to see many of you in Toronto and hope you do not forget to stay over for the IAPBT convention and see what technicians from other parts of the world have to offer. Support Friends of IAPBT. Dues are just 15 dollars per year.■

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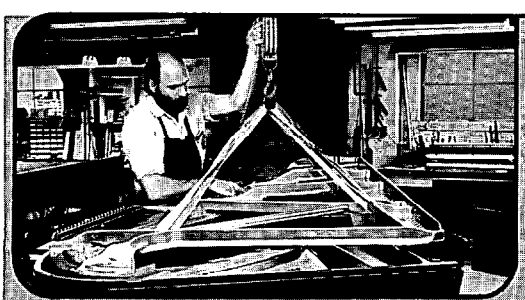

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Welcome To Toronto!

John Lillico
Host Chapter Chairman

We members of the Toronto Chapter are extremely delighted to host this 30th Annual Convention and Technical Institute of the Piano Technicians Guild.

Visit our Reception Booth in the Galaxy Foyer! It will be staffed daily — before, between and after Institute classes — from 7 a.m. to 6 p.m. Plenty of information on activities and things to see and do in and around Toronto await your discovery.

You'll be welcome, too, at our chapter hospitality suite! It's located in room 171 right in the "heart" of the convention area. Donna and I will be pleased to see you. Hours are on an "as you catch us" basis.

Watch for our yellow "Host" ribbons. We're here to help you enjoy Toronto and "Discover the Feeling."■

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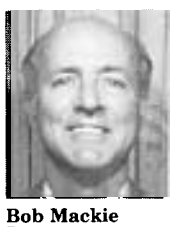

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Glenn Walmsley
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Mike Wassil
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Not Shown: Ted Sambell, RTT, Toronto, and Jim Kramer, Streetsville

Toronto Institute '87

Dick Bittinger
Institute Director '87

Here is the month we have been waiting for — July. The annual Piano Technicians Guild Convention where we will "Discover the Feeling" in the city of Toronto, Canada, at the Constellation Hotel July 20-24. You can still make it — it's not too late!

Here's a little more information on the "Past Presidents Mini- Class, and their schedule for the Institute week. Classes will be in Conference Room D.

Tuesday, July 21
First Period: 8-9:30 a.m.

8 a.m.	"All About Tuning Hammers" *Ernie Preuitt ('82-'84) Kansas City, MO, Chapter*
8:30 a.m.	"Tools You Use In Tuning" *Ralph Kingsbury ('68-'70) Milwaukee, WI, Chapter*
9 a.m.	"Hammer Technique and Simplified Octave Stretching" *"Putt" Crowl ('57-'58) Boston, MA, Chapter*

Wednesday, July 22
First Period: 8-9:30 a.m.

8 a.m.	"Mannerism of Piano Tuners" *Jess Cunningham ('70-'72) New Orleans, LA, Chapter*
8:30 a.m.	"How to Build a Pyramid" *George Morgan ('72-'73) Seattle, WA, Chapter*
9 a.m.	"Chapter Programs" *Sid Stone ('81-'82) Golden Gate, CA, Chapter*

Thursday, July 23
Second Period: 10:30 a.m. - noon

10:30 a.m.	"You and Your Supplier" *Don Morton ('61-'63, '77-'79) Los Angeles, CA, Chapter*
11 a.m.	"Restringing" *John Travis ('57-'58) Washington, DC, Chapter*
11:30 a.m.	"Estimating Work To Be Done On a Piano" *Ken Kadwell ('75-'77) Puget Sound, WA, Chapter*

Friday, July 24
Second Period: 10:30 a.m. - noon

10:30 a.m.	"Pinblock Drilling Jig" *Bob Russell ('79-'81) Cleveland, OH, Chapter*
11 a.m.	"A Concise Resume To Voicing" *Charlie Huether ('84-'86) New Jersey Chapter*
11:30 a.m.	"Reconditioning the Steinway Grand Lyre and Trap Work" *Wendell Eaton ('65-'67) Washington, DC, Chapter*

As you know, this is the 30th anniversary of the Piano Technicians Guild. These past presidents helped make the Guild what it is today. Not only that, as you can see by their class schedule they are going to share some of their experiences of the piano trade. These guys never stop trying to help you be better technicians.

So if you haven't made up your mind to attend the annual convention, please do so now. It's not too late to "Discover the Feeling!"

Convention Reminders

Currency

All dollars are not equal when a border is involved. At present rates, a U.S. dollar is worth more than a Canadian dollar, so those attending from south of the border should plan to convert at least some of their currency for their stay. There is a bank in the hotel lobby, and the hotel desk will convert limited amounts for hotel guests. Credit cards will automatically make the conversion from U.S. to Canadian dollars.

Proof of Citizenship

Although a passport is not required to cross the U.S.-Canadian border, U.S. citizens are strongly advised to carry a passport or other proof of citizenship such as a birth certificate or voter registration card. Drivers' licenses are not considered proof of citizenship. If you are carrying new-looking equipment such as cameras, video equipment or tape recorders manufactured outside the U.S., you may wish to carry a receipt or stop at U.S. Customs to register it before leaving the country to avoid having to pay duty on it.

Transportation

The Constellation Hotel is located very close to Lester B. Pearson International Airport, and a shuttle bus runs at frequent intervals between the airport and hotel. Cost is $2 Canadian.

Economic Affairs

David Barr
Economic Affairs Committee

What's A Piano For, Anyway?

Just a few days ago, another customer of mine made the statement, "It seems as though the piano is becoming something of a luxury item these days. It doesn't seem to fill any real purpose in a modern-day world."

He was a new customer. He also wasn't aware that he had just handed me my favorite soap box. Without any thoughts of self- pride, I jumped right on that stage. I started with my usual "You know, it seems a lot of people feel that way any more. It's a shame. Do you realize how many benefits, especially in today's world, that the piano offers?" I try to keep the speech down to about 10 minutes, because I can go on and on with this subject.

It appears that today's person has to see a practical application prior to adventuring into anything that might require effort. I suppose that isn't all bad, but an awful lot gets thrown out with the simple excuse that it's old fashioned and therefore obviously outdated in a modern world.

Well, I've been giving a lot of time to that general topic the last eight months or so. Originally, I had planned to write about the numerous tangible benefits of playing a piano. Things like physical coordination, eye/ear/hand coordination, mental ability, emotional adaptability and stability, etc., all came to mind. All of these general subjects have been written about at length, I discovered, so the first several attempts on the subject ended up in the round file.

What's a piano for, anyway? That's the bottom line. Coordination, or mental ability, or emotional stability. It is, more correctly, for the sum total of all the single component benefits anyone might be able to list. It is to expand our human capacity. It is to explore our human potential.

Take a look at everything that is going on simultaneously in any given instant while practicing or performing on a piano. I call it a multi-level, multiple-capacity experience. For the sake of simplicity, I define four levels within the human; i.e. the physical, emotional, intellectual, and spiritual. From the very first lesson right on through to the most advanced performance, numerous skills or capacities are being explored and developed on each of these four levels. As your skills continually improve, your ability to process more and more information also improves.

What could be more practical in today's world? Dr. Dennis Waitley, in his tape series, "The Psychology of Winning," makes the statement that in today's complex world, we are confronted with as much data or information to process in a single day as our grandparents faced over an entire lifetime. By developing skills on a piano, students learn to set goals and achieve them. They learn to make decisions. They learn patience and persistence. they learn hundreds of attributes in an enjoyable fashion, the most important of which is a sense of self-worth grounded in a very tangible accomplishment.

In today's competitive, complex, and ever-changing world, the ultimate bottom line has come down to, "will it make me more money, and perhaps help me be a little happier?" This is the business world's influence on us all. Perhaps you feel that this doesn't affect you with your particular clientele, but I disagree. If you feel that way, this business influence pervades our schools and our education systems. There are obvious dollar-and-cent benefits connected with the sports programs. There is only a mystic value placed in the fine arts. The businessmen sees an artist as one who prefers to daydream away his days with little or no real value to us, other than, perhaps, that of entertainment and/or diversions. These are seen as merely temporary distractions from the important issues of life and not as a real contribution to the quality of life.

If you doubt my observations,

Continued on next page

Economic Affairs . . .

take a close look at the secondary schools. The arts are being cut out while sport programs are being expanded. Look at the national budget. Defense spending is up dramatically, while education is being cut. There are direct correlations.

I love to talk to business people about the direct benefits of hiring people who play an instrument, particularly the piano. I tell them that those persons are capable of dealing with problems in a far more creative manner that those without music in their lives. I tell them that the persons with piano in their background can examine a problem from more levels and a broader perspective and then develop a creative solution and implement it much easier than the non-musicians because they enjoy solving problems, being creative, and reaching goals. They are also strongly self-disciplined and accomplishment-oriented, persistent and reasonably patient, cognitive and creative. They are emotionally more stable and adaptable than people who don't explore their emotions through music. They usually already know how to type rather well, or can learn to quickly, since they have very good manual dexterity. Most executives' positions at any level require the ability to interact with a computer, which requires typing.

Did you know that studies have found higher cancer rates among patients with inhibited emotional expressiveness or whose intellectual stimulation is not on par with a person's level of intelligence? Dr. August de la Pena, a psychology professor at the University of Texas, Austin, in his book *The Psychobiology of Cancer,* (Praeger, 105 Fifth Ave., New York) also states that it is information underload, not overload, that is a key to disease. As tasks and lifestyle become automatic, the resultant boredom can drain the energy humans need to sustain health. A nagging hunger for excitement leads to all kinds of irrational behavior. Violence and pain are preferable to boredom and frustration. Dr. de la Pena encourages more involvement in arts, sciences, entertainment and sports. (Quotes also were taken from an article in the December 1986 issue of "Gifted Children Monthly," PO Box 10149, Des Moines, IA 50340.)

There we have it. Dollars and cents and happiness and health all wrapped up in one beautiful package. That wonderful instrument that we earn our livings through is even more practical today than ever before. Let your customers know what's in it for them. they will appreciate it for a lifetime. ■

Samick Names Beck To Technical Post

Robert W. Beck has been appointed as director of technical services at Samick America Corporation, according to a statement made by the firm's president, Kyo H. Chu. In his new position, Beck will direct all of Samick's technical and service operations in the United States. He will also serve as technical liaison with the seven Samick factories in Korea,

"We were especially pleased to have Bob join our firm. His in-depth knowledge of piano manufacturing, design and service will be a great asset to both Samick America and our dealer organization," stated Chu.

Beck began his career in 1961 as the proprietor of a rebuilding, refinishing and retail shop in New Jersey. In 1972 he sold his shop and joined Kimball Piano & Organ Co. as a quality control manager. In 1979, he was promoted to general manager of Kimball's keyboard operation and in 1984 left to join Steinway & Sons as the director of manufacturing.

Beck has a bachelor of arts degree from Fairleigh Dickinson University and is also a member of the Piano Technicians Guild. He will reside in the Los Angeles area near Samick America's headquarters in LaPuente.

Industry News

At the recent music show in Frankfurt, West Germany, Ed. Seiler Pianofortefabrik introduced its "Showmaster," MIDI-compatible grands. Showmaster pianos, available in 5'11" and 6'9" lengths, are capable of activating 1-16 MIDI channels individually.

Yamaha Reorganizes

Effective April 1, Yamaha International Corp. announced changes in its overall structure. Its name has been changed to Yamaha Corporation of America and it will have a new subsidiary company — Yamaha Music Corp., USA

YCA will coordinate and develop strategies for all Yamaha corporations in the U.S., with the exception of Yamaha Motor Corp., U.S.A., and its subsidiary companies. YCA also will coordinate Yamaha's operations in Canada, Mexico and Panama; again with the exception of motorized products. Seiji "Sam" Kajimura will be president of YCA.

All music education, sales and marketing responsibilities here in the U.S. will be assumed by YMC. Naomasa "Nick" Mitani will be president of YMC. He was president of Yamaha Canada Music Ltd., until 1985.

Yamaha International Corp. was established in the U.S. in 1960. It consisted of a staff of five located in two rooms in downtown Los Angeles. One of the five was Kajimura, who will head the new operation.

THE
TECHNICAL
FORUM

Grand Rebuilding

Jack Krefting
Technical Editor

Continuing our series, this month we discuss the actual making of a new soundboard. There are any number of different methods for doing this, and I want to emphasize that this is only my own procedure, not necessarily a standard one. Other rebuilders are encouraged to send in other methods for publication.

As we see in photo one, our subject piano has had its board removed and is being prepared to accept the replacement. The bridge was located to the rim by means of a "tree" — see our May issue for details — and then the board was removed in such a way as to preserve the scaling for subsequent measurement. Any significant pieces of board or rib that might get broken off should be taped back onto the soundboard, just in case a thickness measurement or other dimension might be needed. The top of the inner rim is then scraped clean of old glue and splinters remaining from the old board, and the rib notches are cleaned out with a chisel.

The new soundboard blank is then laid on top of the rim, with the grain direction matching that of the original. Make this measurement with a protractor from the spine side and duplicate it exactly, as this has a profound effect on the board's response to certain frequencies. Any change will make it a different-sounding piano, most likely worse than before, but certainly different in the most permanent sort of way. Assuming of course that the piano was bellied properly to begin with, and that we are not replacing the board for scaling reasons, we should try to make the new board as much like the original as possible. This will include the size and tapering of the ribs as well as the thinning and grain orientation of the soundboard.

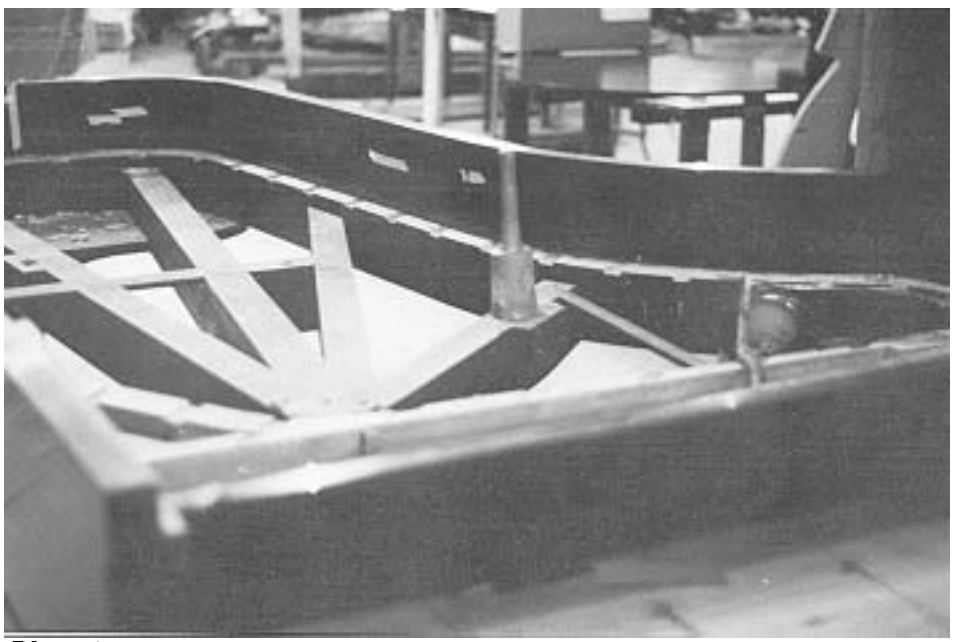

Photo 1

In photo two we have placed a spruce blank on the rim, directly out of the cooker so it will be as shrunken as possible, and scribe a pencil line on the underside of the board all around the perimeter of the inside of the outer rim. This involves reaching up from below, between braces, and the resulting line will be our guide for cutting out the board. As soon as the outline has been drawn, the board goes right back into the cooker so it won't swell up in the higher humidity outside the cooker. Practices vary, but most rebuilders like their boards to be between four and six percent moisture content. In order to produce a good crown with flat ribs, a drier board is necessary than if the ribs are crowned; so the shops using flat ribs tend to cook a bit under five percent while those who crown their ribs find that something between five and six percent works better. We want enough crown, but not too much because that kills the tone.

In photo three we are fitting the new ribs to the rim. We don't feather the ends yet, but during this stage we plane them to the proper width and crown their tops to match the radius of the press, as discussed last month. Incidentally, it does no good at all to have a bellied press and then use flat ribs; if you aren't going to crown the ribs, you might as well use a flat deck and cook the board a bit more.

As we see in photo four, the ribs are now fitted to their notches in the rim and are ready to be crowned. In our shop, this is done on the planer with a fixture that cuts the crown to the same 72′ radius as is cut into the lower deck of the press. The ribs are then numbered and put back into the cooker in order that they can easily be brought into position later.

Next, the board is removed from the cooker and cut out, either on a bandsaw or, as we see in photo five, with a saber saw. While still dry and with heat lamps keeping it that way, the board is fitted to the rim. We use a rasp to remove material wherever necessary, although this part of the operation could also be done with a hand-held belt sander. When satisfied with the

2

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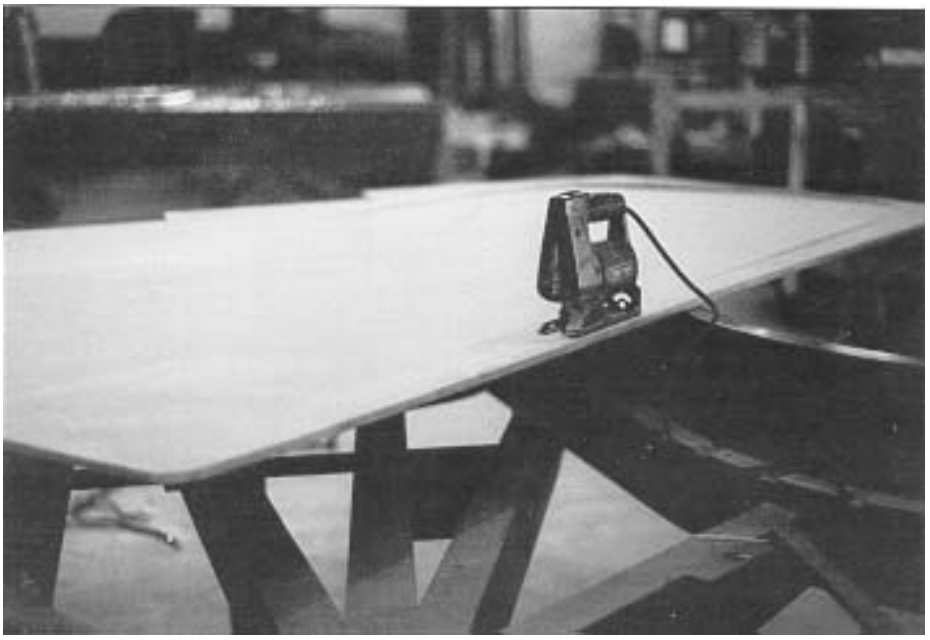
fit of the board to the rim, we place the ribs back into their notches and clamp the board into positon so the rib locations can be accurately marked on the boottom of the board with a pencil. The board is then unclamped and returned to the cooker and the ribs are bradded so they won't slip out of position when glue and pressure is applied.

When the go-bars are ready — that is grouped according to length so the longest ones can be used in the middle — and the scrap strips to protect the ribs are at hand, we then assemble a crew of five or six so the bellying can be done quickly as possible. One crew member applies glue to each rib and hands it to two others who, from their postions on either side of the press, locate the exact position of each end of the rib. When it is pressed in place and pieces of scrap wood have been laid on top of the rib, two others start applying go-bars from the middle outward, averaging 135 pounds of pressure per bar and spacing them every four inches or so. The sixth member of the group cleans up the squeeze-out from the first rib while the second is being glued, and the process continues until all ribs have been glued down. Photos six, seven and eight show some details of this operation.

The black markings on the go-bars, incidentally, are indicators of the length of that particular bar. This makes the whole hurried process a lot easier, since there isn't time to measure each bar before putting it in place and these marks indicate at a glance whether or not a particular bar will fit. The reason different lengths are needed has more to do with the greater elasticity of the middle of the press than the crown built into it, especially since the latter is largely compensated for by the crowning of the ribs.

Photo nine shows a board just out of the press. At this point the ribs are not rounded, tapered or shaped in any way except for the crown previously cut into their upper surfaces. If we had done any rounding of the undersides before gluing the ribs to the board, it would be difficult to keep the go-bars from slipping off the ribs.



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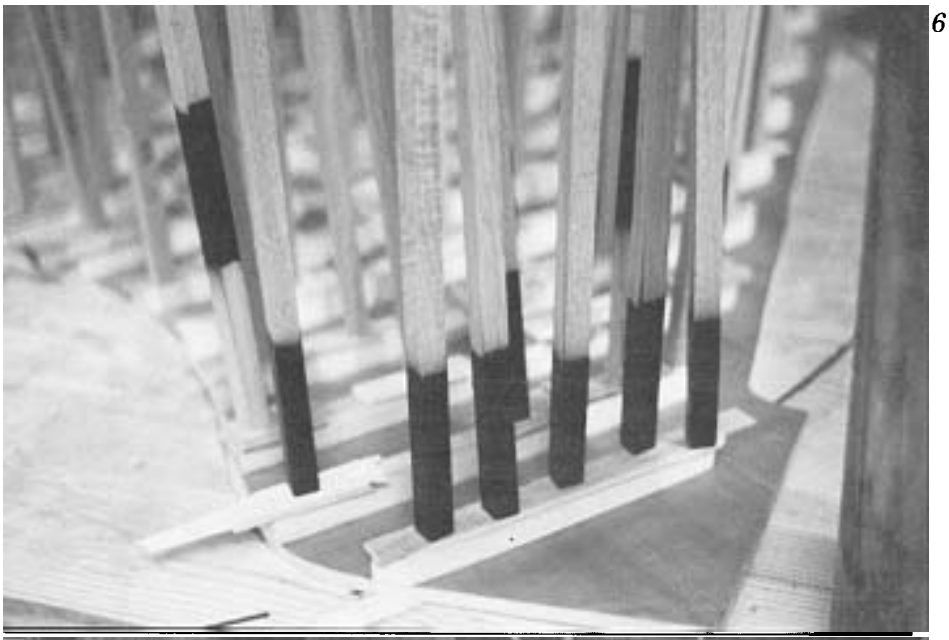

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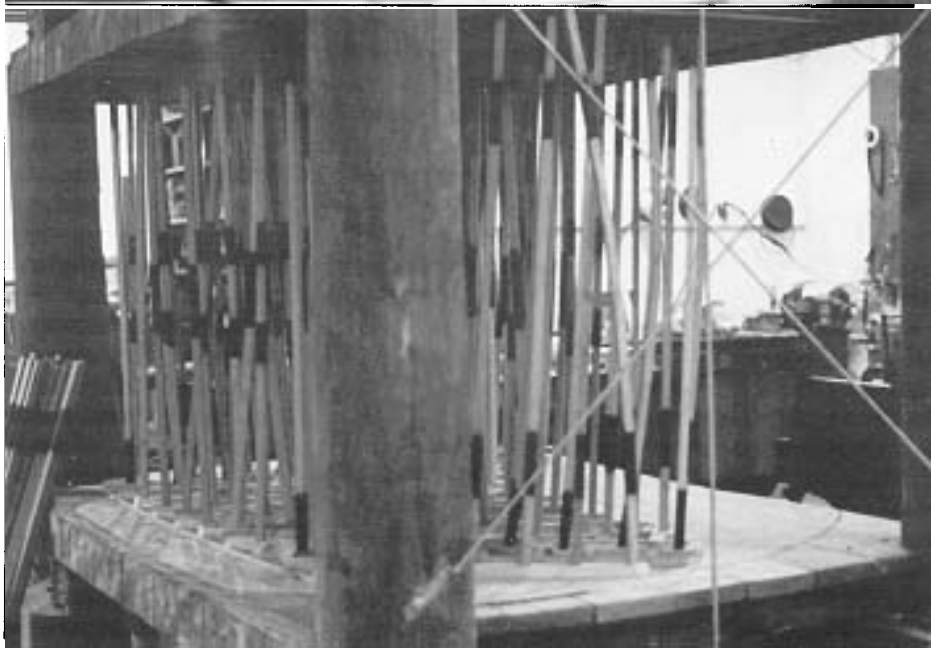

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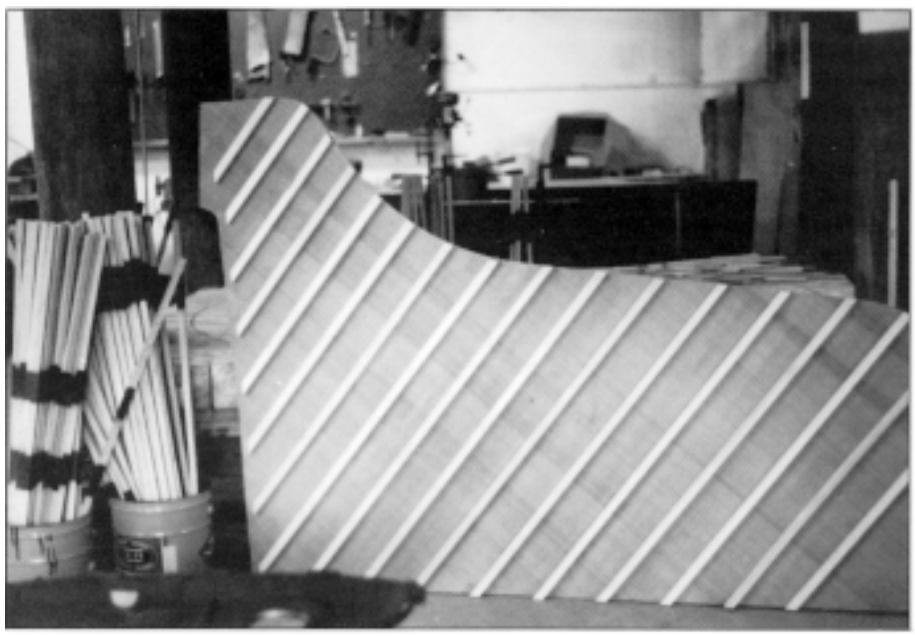

Next month in this space we will discuss the scaling of the board and ribs.

The Dumb Sales Claim Contest

This month's entrant is Wim Blees of St. Louis, MO, who offers the following two stories;

A customer told me her grand piano, which she had inherited from her mother, was unique because her mother had told her that this 5' 6" grand had a concert-sized harp in it.

When my dad worked for the Starck Piano Company, he was told that there used to be a salesman who told customers that Starck piano keys would always be made of ivory because the Starck company owned a herd of elephants in Africa.

Reader Comment....

Dear Mr. Krefting:

I have enjoyed Mr. Gravagne's writing (Journal, *Feb. 1987) and agree that it is probably unnecessary to crown in a spherical shape. However, on the function of the crowning procedures I do believe that force-crowned boards are installed in their manner to add projection which makes crowning indeed an acoustical as well as mechanical proposition. The increased surface compression aids in harmonic clarity as well as sustain time. It is also important to use a rib stock such as clear sugar pine because of its flexibility and dimensional stability. It's commonly used by pattern-makers for the same reasons.*

Our shop has done a forced crowned board with spruce ribbing and although the top end had explosive sound the bottom lacked fundamental depth. The species of spruce used may also be important to the question of soundboard crowning. Eastern red spruce with extremely small resin canals, slow growth at the 2,500-foot level, and gradual early- to latewood transition is our choice for force-crowned boards. Wood-drying techniques are another crucial element in the pursuit of superior tonality. Accurately dried board stock is one control factor tough to achieve unless you have access to a mill willing to give you special considerations and of course, if you're willing to pay the price.

Brent Fischer, RTT
Lafayette, LA

Please send all technical correspondence for publication to me:

Jack Krefting, Tech Ed
PO Box 16066
Ludlow, KY 41016

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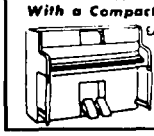

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The Worst-Case Scenario: What If?

Stephen Lloyd

I recently completed an interesting exercise which may interest some of you.

At the Las Vegas convention, several people mentioned tool theft, and it brought to mind local losses as well. Feeling vaguely uneasy about what might happen if my tools were suddenly lost or stolen, I decided to make an inventory of my tool boxes and get some insurance.

I began by making a thorough list of the tools contained in my principal carry-in kit, military fashion, listing them as "blade, screwdriver, slotted,..." I'm sure you get the picture. I then listed their present replacement costs. There were, not counting small parts or pieces of felt or leather, 64 line items valued at 505 dollars. This did not include an electronic machine, either. I was shocked.

Since the beginning of my service career, I've prided myself on handling about 99 percent of all repair work in the customer's home, and most using only that carry-in kit. I have two more tool boxes in the car which contain things like an electric drill, a Dremel tool, jigs for boring, etc. At times, I even carry an upright piano tilter. I also stock a number of parts like dampers, elbows, trap springs and bearings, and other generic items I can sell and install on short notice. Just like most of us.

"I then listed their present replacement costs. There were, not counting small parts or pieces of felt or leather, 64 line items valued at 505 dollars. This did not include an electronic machine, either. I was shocked."

The figures got my attention. Now, I want to make a more comprehensive inventory of my other tools, talk to my insurance agent about a rider on the homeowner policy or auto theft policy, or apply for the Guild-sponsored tool and bailee policy. Some other thoughts lead me to think the latter idea is probably the best one. You become a bailee when you possess property belonging to someone else, either knowingly or not. And needless to say, I would rather not face the financial loss associated with either lost or damaged keys, not to mention a whole action. The embarrassment would be bad enough.

But that's only part of the problem. The real essence of what I'd like to say centers on the idea of limiting risk exposure. If your tools were to become lost or stolen, regardless of insurance, you might be out of business for days or even longer. And all of us have accumulated rare or irreplaceable tools.

I use a four-door sedan. That means that the heavy tools are out of sight in a locked trunk. But I usually leave my nice carry-in case in plain sight on the seat. Or occasionally, I might leave my case beside a piano in a public place while I find a rest room or my business contact only to find myself gone longer than expected. Some people drive cars which invite theft, as well. In fact if you drive a foreign dream machine, you might want to keep a spare of the kit I'm proposing under your bed. A nice car invites the curious and the dishonest alike.

The Kit

In business classes we often hear reference to "the old 80/20 rule." In our tool situation, it's closer to 90 percent of our work being done with 10 percent of our tools.

In business classes we also study a concept called "marginal utility." In this context, the next tool added has less value than the one added previously. It is obvious that we must have a tuning hammer to tune a piano. It must also be thoroughly familiar and totally adequate, no matter what its cost. It is also easy to see that a tuning reference is necessary — a fork or some other device which gives a predictable reference. And mutes are needed to isolate strings. A 1/4-inch screwdriver can be used to insert those mutes and provides sufficient means to disassemble most pianos. And all of that fits into a simple case, which would be adequate for 80 percent of our work.

To underscore the idea of a smaller tool kit, remember that most customers for most technicians are women. Research has shown that they feel more comfortable with a smaller case. A large tool kit might make them think, "are you here to tune my piano or to tear it apart?"

To go from 80 percent of my work to 90 percent, I added only one of each of the following: no. 2 Phillips blade, fits handle used with screwdriver; upright letoff regulator blade; 1/8-inch Kimball screwdriver blade; Tekna flashlight, one by five inches; adapter, Apsco 16226 slender extension tip (useful in spinets with crowded pins or to get over obstacles with grands); diagonal cutting pliers; six-inch visegrip pliers; five-inch with wire cutter; 45- degree angled damper regulator blade; chalk holder with chalk; small plastic vial of near-solid lubricant used on trapwork, etc.; additional 15-degree angle head with two-inch tuning tip; two tools for adjusting capstan screws; wood and cloth strap lid prop for most uprights; and five-inch long locking surgical forceps. A couple of dollars' worth of things like a small bottle of Titebond, a couple of single-edge blades, a dust cloth, and a paintbrush can be added without serious additional bulk.

After that, I get really philosphical. If I were to carry a....., what would it buy me? It would save a trip to the car, but couldn't I really use a break? Of course, sometimes the car is surrounded by sheets of water or obscured by a blanket of cold wet snow. W. Dean Howell in his excellent little text, "Professional Piano Tuning," suggests using two tool boxes, one for tuning and the other for repairs. I only suggest that the repair box be expanded to include backup tuning tools.

If you examine my list, you find that it is arranged by priority. From adjusting the strings, gradually the tools become less and less necessary for specific pianos. Before adding any tool to your take-in kit, estimate the probability that this tool will be used in nine out of 10 pianos.

Adding the list up, counting the six 3/4- by three-inch rubber mutes I use as one line item, or the one-by one- by eight inch multi-compartment plastic box containing rubber bumpers, a few punchings, some leather, etc. as a single line item, I get a total of 20 line items with a replacement cost of $185. That assumes a small attache-style case at $18, a hammer from one of our major suppliers at $56, and a Sheffield A-440 fork. It also weighs only seven pounds compared to 22 pounds for my other kit.

Now, what if the old tuning case is going into my car's not-quite-adequate trunk beside its mates and a shop vacuum. And into it I'm putting another — older, not so nice — tuning hammer, another tuning fork, and equivalents of most of the other tools. If I come back to my car to find its window shattered and that gorgeous black vinyl case missing, I will not break down into a simpering, mumbling fool with all other sorts of noises and tears. I will go into a predictable, manly swearing fit, start my engine, gun the lizzy out of the parking lot and smugly follow plan b. I can go on to the next job and call the insurance agent while I shop for a bigger carry-in tool case. Just like James Bond, or Rambo, or any other professional.■

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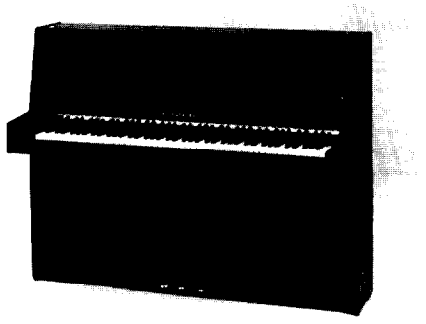

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LARGE

Romantic Or Transitional
The Mid-19th-Century Grand Piano

George Egerton
Vancouver, BC, Chapter

This past autumn two members of the Vancouver, Canada Chapter of the Piano Technicians Guild traveled to Europe to lecture and conduct research on pre-modern pianos. Marinus Van Prattenburg, a specialist in the restoration of early pianos, returned to visit the ancient Dutch town of Amerongen, where he was born and raised and where he still has many relatives. Marinus returned bearing a gift with him in the form of a lovingly restored Austrian fortepiano by Friedrich Hoxa (c. 1825) which he donated to Amerongen's famous castle, a building with its origins in the 12th century. The piano was formally received and given its inaugural performance in a superlative recital by Geoffery Madge, head of the piano department at the Royal Dutch Conservatory of Music in The Hague and a specialist in performance on pre-modern pianos. Marinus, while in Holland, gave a series of illustrated lectures focusing on the restoration of a Streicher piano of 1848, most notably to the Dutch festival for early music in Utrecht. George Egerton, a history professor at the University of British Columbia and an avid hobbyist with a passion for early pianos, also delivered a lecture at the Dutch festival for early music; the following is an expanded version of this lecture, published in two parts. Marinus and George, while in Europe, were able to visit several public and private collections of early pianos and were impressed with the increasing level of interest in these instruments. It is hoped that what follows will add to the growing appreciation of these pianos in North America.

Since the Italian, Christofori, invented the piano about 1700 by developing hammers and an action which, unlike the harpsicord, could vary and graduate the amplitude of the sound — hence *piano e forte* — the instrument has undergone many and radical changes until today we have the modern Steinways, Bosendorfers, and Yamahas which are "grand" in every way. These leading modern piano names, and a few others such as Grotrian, Baldwin, and Kawai, although marked by subtle differences of touch and tonality among themselves, all share the desired capabilities of the modern perfomance piano; fast, even actions, instantly responsive to the touch of the artist, and great potential of dynamic expression, ranging from the subtle pianissimo to thundering fortissimo, all the while maintaining an essential evenness across the bass, tenor and treble registers of the keyboard. This result, of course requires that they be serviced regularly by a skilled piano technician.

If modern pianos share largely similar qualities of performance

and musicality and, for the most part, deliver what has been justly termed the "Steinway sound," with Steinway holding about 80 percent of the market for concert and recording-quality pianos, the question presents itself as to whether the modern grand piano, an instrument which was perfected in all its principal technical features by the late 19th century, is the instrument appropriate to the full range of the piano repertoire, from the 18th to the 20th century. Recent years have seen a major challenge to the hegemony of the "modern" piano, as musicologists and performers have made a powerful case for the appropriateness and authenticity of performing on instruments which were contemporary to the composition of the music. As Vancouver audiences and devotees of early music well know, no one has done more than Malcolm Bilson to make the case, both musicologically and in performance, for the early piano. Bilson and others like Britain's Richard Burnett[1], in their lectures, publications, performances, and recordings, have demonstrated the very different capabilities of the classical pianos made by such firms as Broadwood, Clementi, Graf, Walter, Stein and Streicher. While only the extremists and purists would insist that *all* of the early piano repertoire must be performed on a classical piano, there is broad agreement among pianophiles that the rediscovery of the very different technique and sound of the classical piano has immeasureably enriched and diversified our appreciation of piano music.

If a convincing case has been made for the classical piano, what about the "romantic" or "transitional" piano of the middle years of the 19th century, roughly from the 1830s to the 1870s? Can a similar case be made for the pianos that Schubert, Chopin, Liszt, Schumann, and Brahms composed and performed upon? The answer to this question is not yet apparent; but there are early indications of a new wave of interest in the mid-19th century piano and a growing possibility that performers, recording companies, and audiences may soon be paying tribute to the Pleyels, Erards, Broadwoods, Collards, Chickerings. Bechsteins, and Bosendorfers of the mid-19th century.

At this early state of the debate, analysts are divided even on nomenclature. There are central issues at stake as to whether the term "romantic" or transitional is more appropriate to describing the mid-19th century piano. Those who embrace an evolutionary model, and interpret the technical history of the piano as progressing from the primitive early pianos to the culminating perfection of the modern grand, would seemingly favour the "transitional" definition. Judged by the performing capabilities of the modern concert piano, the mid-19th century pianos then would be assigned a transitory, inferior status, and should be forgotten or left to the domain of museums. Indeed, some pianists, critics, and writers are positively hostile towards the return to early pianos. Ralph Kirkpatrick saw this phenomenon as disastrous and bemoaned the fact that fortepianos were not only buzzing out "archeological Mozart" but also, worse still, "archeological Schubert."[2]

Cyril Erlich's scholarly history of the piano displays a strong bias against the revival of the fortepiano, which he sees destined to remain a "minority cult," given the "manifest inadequcies" of these instruments. In his view "pianos made before the Steinway revolution are of interest today primarily to music historians, antiquarians and collectors of furniture."[3] By contrast, scholars like Edwin Good strongly reject the evolutionary model for understanding the history of the piano. Good, in the preface to his fine history of piano technology, argues that too many piano scholars have seemingly taken it as "axiomatic" that the piano has advanced, that change was "synonomous with improvement or with progress" and contemporary Steinways, Bechsteins and Kawais are unquestionably "better" than the Steins, Broadwoods, and Konnickes of earlier days. Good continues:

Affectionate as I am toward any good piano that I find under my fingers, whether made in 1790 or 1970, I think that Mozart was not mistaken in his enthusiasm for Johann Andreas Stein's pianos in 1777, nor was Ignaz Moscheles making the best of a bad job when in 1831 he exclaimed with pleasure over his new Erard. 'A very violoncelli!' That the piano has improved in certain objective ways I do not doubt; it stays better in tune, it holds greater tension, it has strings of higher quality, it puts forth more volume. but I am unwilling to conclude that for certain musical purposes — such as playing music by Mozart, Beethoven, Schubert, Schumann, Chopin, perhaps even Brahms — the modern piano is in all respects better than older ones. It is different from them.[4]

For those who would see greater value in an "historicist" model and wish to understand pianos primarily within the context of their own era, the term "romantic" is the obvious label for the mid-19th century piano. Such pianos would then best be appreciated in the context of the techology, musical culture, and aesthetics of their own unique times.

What are the major features which can be said to distinguish the romantic piano from the earlier classical piano on the one hand, and the modern instrument on the other — several considerations should be stressed at once before the attempt is made to suggest answers to this central question. First, let it be said that there is not one type of piano sharing identical characteristics which can be called *the* romantic piano, any more that we can talk of *the* classical piano. Piano technology through the middle years of the 19th century remained in a state of constant and radical innovation, as increasing numbers of makers competed for both the growing performance market and a burgeoning domestic demand. There are several types of romantic pianos with quite distinct technological and performance characteristics. Indeed the scale of variety and choice open to pianists through this period can be said to distinguish it from the modern period where the differences between the makes of piano are much less pronounced.

The existence of rapid change

through the period does not, however, negate the possibility of discerning common features which make it legitimate to speak of the romantic piano. These common features are themselves in large measure a response to the growing demands of romantic composers and audiences for pianos of expanded keyboard compass[5] and, above all, of enhanced dynamic range — especially amplitude of sound. A piano with radically greater dynamic than the classical piano suited perfectly the rising romantic aesthetic with its desire to express extremes of emotion and sentiment. Such a piano could project its music to the far reaches of the large concert halls now being built to meet the musical thirst of the swelling ranks of wealthy bourgeois classes. If it was the violin in the hands of Paganini which first ignited the romantic musical sensibility, it was the piano with its capacity to perform as a solo recital instrument, capable also of expressing through transcription the range of orchestral and operatic repertoire, which became the romantic instrument *par excellence*. The romantic piano, with its musically universal adaptability and facility in capturing and transmitting diverse musical idioms, had a tremendous appeal to audiences who had little opportunity to hear opera or orchestral performance outside a few large cities, and who, of course were without records or radio. Concurrently, the performing qualities of the new pianos made possible the cult of the romantic virtuoso pianist-composer, whose recitals evoked public response functionally equivalent to the modern "rock" phenomenon. In the case of Liszt, the "Paganini of the piano," the cult of the romantic piano virtuoso reached its apogee, while the pianos used by Liszt were tested to the outer limits — and often beyond. One Viennese critic, Moritz Gottlieb Saphir, captures skillfully, in caricatured form, the passion of romantic sensibilities, the power of Lisztomania, and the awesome challenges to piano technology in the following passage:

Liszt... is an amiable fiend who treats his mistress — the piano — now tenderly, now tyrannically, devours her with kisses, lacerates her with lustful bites, embraces her, caresses her, sulks with her, scolds her, rebukes her, grabs her by the hair, clasps her then all the more delicately, more affectionately, more passionately, more flamingly, more meltingly; exults with her to the heavens, soars with her through all the skies and finally settles down with her in a vale of flowers covered by a canopy of stars...after the concert Liszt stands there like a victor on the battlefield, like a hero of a tournament. Daunted pianos lie around him; torn stings wave like flags of truce; frightened instruments flee into distant corners; the listeners look at each other as after a cataclysm of nature that has just passed by, as after a storm out of a clear sky, as after thunder and lightning, mingled with a rain of flowers and a snow of petals and a shimmering rainbow; and he stands there leaning melancholically in his chair, smiling strangely, like an exclamation point after the outbreak of general admiration. This is Franz Liszt.

The common features, then, in the technological innovations of 19th century piano makers were aimed largely at enhancing the dynamic range; as well as the stability of performance pianos. This meant that the following technological changes were fairly common, in greater or lesser degree, across the various makers; piano strings became longer and thicker and were subject to greater tensions to enhance amplitude; trichord stringing generally replaced bichords in the tenor and treble registers; these changes in turn demanded sturdier case-work and soon led to the introduction of iron bracing by several makers; hammers became larger, heavier and more eliptical in their crown, with fewer makers covering the felt with leather; the driving power of actions was enhanced; soundboard surfaces increased in size along with the length of strings; knowledge was gained on the most suitable striking-points for hammers on the strings; nearly all performances were on the flugel-shaped "grand" piano rather than on the rectangular "square," (even though the square grand itself was subject to major development in America, where it enjoyed a vast domestic market before being surpassed by the modern upright or vertical piano).

A final notable development of the romantic piano which distanced it from its classical predecessor was the general abandonment of the special-effect "stops" — bassoon, buff, cembalo, moderator, venetian swell — in favor of letting the piano speak its own voice. Hand stops now became pedals; and pedals were more and more limited to two functions; keyboard shift or *una corda*, and damper-raising or sustaining, sometimes allowing for separate sustaining in different registers.

While the principal theme common to the technological development of the romantic piano can be said to have centered on enhancement of dynamic range, two quite distinct streams of 19th century technological innovation can be discerned, each with quite distinct characteristics; the conservative Viennese-South German stream, and the more radical British-North European stream. While Viennese builders such as Graf and Streicher certainly expanded the dynamic range of their instruments, the tradition of the classical piano remained strong. Cases were enlarged and strengthened to accommodate increased tensions; but the Viennese makers resisted the introduction of iron bracing, in part because of fears that this would adversely affect tone. As well, the Viennese actions remained more classical with qualities which made for rapid, light, and facile execution and repetition of notes, but which with shallow key dip, higher leverage, and light hammers inhibited increased mass of impact of hammers on strings. The Viennese romantic piano, then, remained closer to the classical tradition, and was noted for its facility of action, clarity of tone and efficiency of damping, rather than its capacity for projecting an amplitude of sound which could dominate a larger orchestra and fill the further reaches of concert halls. With such characteristics it could be argued that the Viennese romantic piano is best suited to the

requisites of ensemble music and lieder accompaniment, rather than the concerto and recital repetoire.

By contrast the instruments best suited to the challenges of romantic piano concerti and virtuoso performance are those produced by Britain and France — in particular the Broadwoods, Pleyels, and Erards, to name the leading makers. Here, with the British serving as the early innovators, the dynamic range and stability of the piano was increased dramatically, while the techniques of the industrial revolution gradually began to be applied to piano production. With iron hitch-pin plates and then iron tubes and bars strengthening and stablilizing the structure of the piano and allowing the use of much heavier strings and higher tensions, the British pianos led the way in producing a larger sound. It was the Broadwood firm also, which first determined striking points for maximum projection of sound. The British makers also developed an action — usually called the "English action," though used widely by North European makers — which was durable, powerful, and capable of levering heavier hammers at high velocity to strike for maximum dynamic effect, while still retaining an even pianissimo capacity. These single- escapement actions, with a deeper key dip, did not have the facility and speed of the Viennese actions; but they were fast enough to meet the requirements of most performers. Erard would pioneer the development of a double escapement, repetition action; but it would not be until late in the century that this innovation would be widely applied by piano makers. Most of the makers in the British and North European stream also used felt- covered hammers, and did not, as with most Viennese makers, place a finishing layer of leather over the hammer. With power, durability, and tremendous dynamic range, these were the pianos most prized by the chief romantic composers and performers — Chopin favoring Pleyels, Liszt, Erards.

Having identified the principal innovations and qualities which set off the romantic piano from its classical predecessor, we will attempt next month in a concluding article to delineate the differences between the romantic and modern grand piano.

Notes

1. Richard Burnett is the owner and director of the collection of historic-keyboard instruments at Finchcocks, Goudhurst, Kent, U.K.
2. *Early Music;* 1983, p.40.
3. *The Piano: A History;* pp. 24-26, 47.
4. *Giraffes, Black Dragons and Other Pianos* (Stanford University Press, 1982), p. vii. Edwin Good is Professor of Religious Studies, Stanford University.
5. By the middle of the 19th century, a compass of seven octaves, AAA-a4, was common.
6. Cited in Arthur Loesser, *Men, Women and Pianos,* (New york, Simon and Schuster, 1954), p. 369.

Correction

In Janet Leary's June Economic Affairs article, "What is your real profit?" a sentence in the article's first paragraph was inadvertently garbled. The paragraph should read: "What is your yearly income? How much money do you earn an hour after expenses? How do you determine that a price increase is needed? For the small businessman the answers to these questions can be clouded by the fact that he/she often does not have a budget and is not drawing a predetermined check at the end of each week's work to help determine those answers. Instead, revenue is received, expenses are paid — and what's left is weekly income or profit. Depending on incoming expenses, this 'profit' figure changes from week to week."

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The Inner Rim Meets The Soundboard

Nick Gravagne
New Mexico Chapter

The rim, beyond the obvious use as a gluing surface, provides one of the principal ingredients in the production of good vibrations. In order to realize its full potential, a good, snappy soundboard must be rigidly secured at the inner rim, as rigidity of retention is crucial to good tone production. Specifically, what is wanted is conservation of soundboard energy. When the board is set into vibration by the string, that vibration can best "stay put" by a secure gripping of the soundboard at the rim. The rim must be a shock reflector rather that a shock absorber. Imagine a rim made of balsa wood or cork. The soundboard movements would reach this soft, elastic material and "leak out." Aso, a rim which is too narrow, uneven or weak will receive and absorb the soundboard vibrations and conduct them uselessly away.

Consider it this way; if a 10-ounce blow is delivered to a key and three ounces is expended in the action and damper, then the remaining seven ounces has been delivered to the string as energy to the soundboard which, in turn, distributes the shock waves to the rim/case. It is the function of the dense case, the inner rim and plate to keep that seven ounces of energy in the soundboard causing it to vibrate as much as possible. A piano in which the seven ounces dissipates quickly through an elastic rim, a moving or unrigid plate and case is a poor piano. In such an unfortunate condition it makes little difference how well the string scale was laid out. The tone will be disappointing. This is one very important area where grand pianos are inherently superior to uprights. There is more density, continuity, and sheer volume of wood at and under the gluing surface.

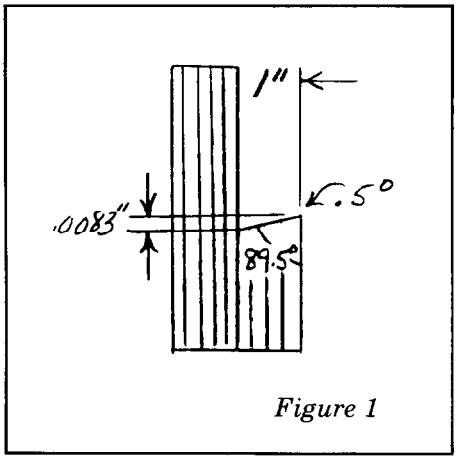


Figure 1

In addition, a poor glue joint, either in regluing a loose board or in installing a new board, amounts to the same failing — loss of energy and subsequent tone deterioration. Here again, a beautifully crafted soundboard with a poor rim-glue joint will not function as well as a less good soundboard with a rigid retention at the rim.

Most grand pianos bevel, or crown, the inner rims to conform to the crown of the soundboard. That is, the plane where the inner rim meets the outer rim, is lower all around than the plane which defines the inside edge of the inner rim. Technically this is refered to as a "rast" or "rasten," and matching the rim to the shape of the crown obviously makes for a stronger soundboard/rast glue joint while, at the same time, serves to preserve the soundboard crown.

This rast bevel, in terms of angular measurement, based on the 60′ crown radius, is small at only 1/2 degree. Note: the rast angle is technically called out at less than 90 degrees, e.g. an 89.5 degree bevel. However, I find it less cumbersome to think of it from the reference of the small angle, the .5 degrees. Since the "crown rise" per foot in the 60′ radius soundboard is .100′, a one-inch wide rasten would theoretically be only .0083′, .100 divided by 12, deeper where the inner rim meets the outer rim, and a one and one-half-inch rasten would be .0125′ deeper. The angle is the same. See figure one. Check your micrometer for how tiny these amounts are.

Some builders match the soundboard crown to the rim bevel and some do not. A well-known maker bevels the inner rim at 88.5 degrees (the small angle at 1.5 degrees). In a one-inch rim the depth would be .0202″. See figure 2. Interestingly, this 1.5- degree angle, if in fact matched to a soundboard crown, relates to a crown rise of approximately .280″ per running foot. so, if a three-foot rib where actually crowned accordingly it would be 7/16″ high at the center of its length. The radius base for such a soundboard would be 21′, A far smaller radius, higher arc, than the typical 60′ crown. Obviously,

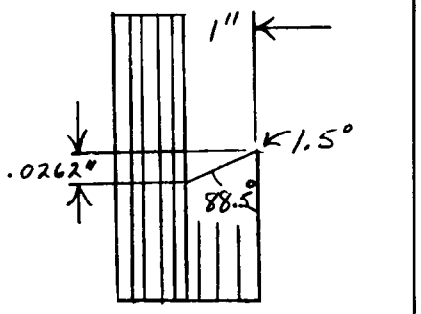
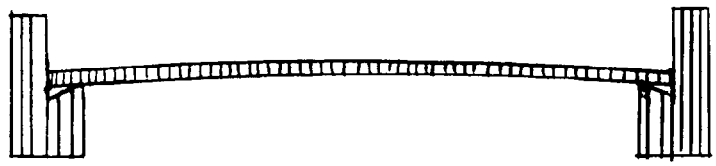


Figure 2

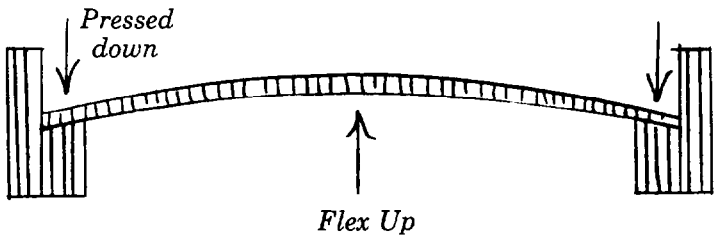
the board would not be crowned so high just to match the rim bevel.

The reasons usually given for a deeper bevel relative to crown is that the soundboard, in being pressed down into this steep bevel, would be encouraged to flex upward a bit towards its center. See figure 3. The two main advantages stated by use of this technique are first, some additional vibrancy introduces into the board. Even if this can't be convincingly demonstrated, it at least seems sensible enough. In any event, many inner rims are beveled steeper, if beveled at all, than the board is crowned. The Knabe soundboard of last month was glued to a 2.5-degree beveled rim. Incidentally, it should be obvious how futile it would be to hope to determine what amount of crown once existed in a soundboard by measuring the bevel (soundboard is out) and calculating a crown rise based on it.

Although it would seem that gluing a soundboard onto a rim would be the practical application of the theory, not surprisingly, it turns out not to be completely true. For one thing, the soundboard, in its natural crowned condition, is anything but uniform relative to the rim bevel. In fact, like music wire, a soundboard assembly has quite a mind of its own until it is forced to be rigidly limited at fixed points. It is also a different shape at 110 degrees fahrenheit and 20 percent humidity than at 70 degrees and 40 percent humidity. So, even if the soundboard and rim matched in the former ambient conditions they won't in the latter. Furthermore, since the crown of a soundboard is primarily across the grain and not naturally with the grain, the board is not "cupping down" where the grain direction meets the rim at 90 degrees or thereabouts. Such is the condition at the tail, for example. Now consider the fact that the inner rim itself in some pianos is not flat along its running length and it comes as no surprise that the soundboard does anything but drop right into place to mate with the rim no matter what the bevel.



Soundboard without rib, not pressed into bevel (exagerated for clarity)



Pressed down into bevel

Figure 3

Soundboard making and installation are not like tool-and- die making where the theory of a machine process and the actual part-piece produced by that process can be astonishingly close. But metal doesn't "breathe" like wood. This isn't to say that the rast bevel and soundboard crown relationship shouldn't be carefully considered in replacing a soundboard, but the link-up of the two is not as clear-cut as might be theoretically indicated.

Since the rim and case are essentially the same thing, a brief word regarding the case is fitting. It must be strong and rigid. The contemporary grand case is made up of thin hardwood strips glued togeher and pressed into shape in mechanical or hydraulic presses. It is dense in a good piano and reinforced by heavy wooden posts. The case is a structural component which not only provides for rigid soundboard retention, but is essential in aiding the soundboard to maintain its crown as well. It simply does this by staying put; by not widening or otherwise distorting. Hence the need for the wooden posts and, in the Steinway models B and D the bell underneath the soundboard which ties the plate and case together.

The soundboard/rib unit could not begin to withstand 1000 pounds of pressure by itself; that is, not glued to the rim. When in the piano, and upon receiving compression from downbearing, the soundboard is prone to flatten. This force on the soundboard is distributed not only in a vertical direction on the rim, but outward at the case also. Should the case widen under this load by as little as .0015′ the soundboard could go flat (Based on a 60′ radius. A 50′ crown radius relates to a .002″ safety zone). Should the case widen beyond this small amount the soundboard will not only flatten but will most likely crack as well. As incredible as this may seem, the trigonometry of it is simple and clear. It is for this reason that the Mason & Hamlin company introduced their "tension resonator," invented by Richard Gertz in 1900, in order to maintain the case configuration.*

Undoubtedly, many pianos arrive in rebuilding shops with flat and split soundboards, or partially flat ones, due to a widening of the case and no other reason. Good grand pianos have relatively massive rims and large posts not only for energy reflection to the soundboard but for structural stability as well.

A more practical discussion of the relationship between the rast bevel and the soundboard crown along with a closer look at the important glue joint.

*The Mason & Hamlin Company used to make available to their dealers a sales device which graphically illustrated this point. The wording on this device specifically stated a .002″ safety variance which may or may not indicate that a new soundboard for this piano is based at something like a 50′ radius. Claims have been made over the years that the Mason & Hamlin boards are crowned higher that the average 60′ board. ■

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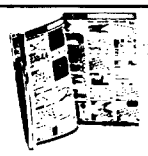
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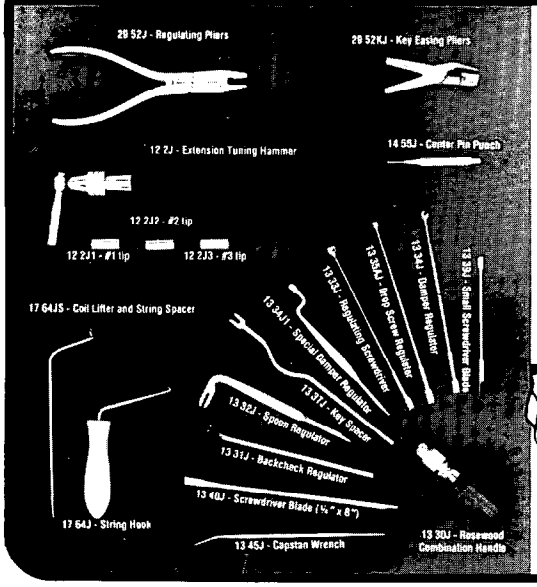

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Young Beethoven And Stein Pianos

Jack Greenfield
Chicago Chapter

Beethoven's Early Musical Training

Johann Andreas Stein was recognized as the leading piano builder in Central Europe when Ludwig van Beethoven,1770-1827, began to perform and compose at the piano at an early age. Beethoven was born in Bonn, Germany, a small town nearby on the Rhine, the residence and location of the court of the prince electors who ruled the independent city of Cologne and the surrounding area. Beethoven was raised in an active musical enviroment. Cologne was one of the few independent cities that maintained a court musical establishment comparable to those maintained by royal courts. Beethoven's grandfather, who was Flemish and was also named Ludwig van Beethoven, 1712-1773, had come to Bonn in 1733 for his appointment as a bass singer in the court chapel choir. due to his musical and other capabilities he showed for the post, he was appointed musical director in 1761.

He had only one child who survived to adulthood, Johann van Beethoven, the composer's father. Johann, a person with serious flaws in character, achieved far less. He sang tenor in the choir and supported himself mainly by giving violin and piano lessons to younger students. Ludwig, the second child of Johann and his wife, was the oldest of three living sons. Four other children died very young.

> "Neefe's instruction was the best training Beethoven ever had. He was given lessons on the clavier, organ, theory and composition. He acquired a forceful playing style with great power, ability to sight-read quickly, and brilliant skill at improvisation."

Ludwig was given lessons by his father until about 1779 when he started to receive training from other muscians in Bonn associated with the court. Christian Gottlob Neefe, a popular composer of light opera and an able clavierist who came to Bonn to serve as musical director of the court theater and later became court organist, is credited with discovering Beethoven's genius and providing early guidance and help toward the development of Beethoven's rich talents. Neefe's instruction was the best training Beethoven ever had. He was given lessons on the clavier, organ, theory and composition. He acquired a forceful playing style with great power, ability to sight-read quickly, and brilliant skill at improvisation. At the age of 12, he played Bach's *Well-Tempered Clavier*. This early training gave him the ability to perform such feats in later years as playing

a rehearsal of his "C Major Concerto" in B Major because the piano was tuned a half-tone sharp, according to Schonberg in *The Great Pianists*. Also at the age of 12, Beethoven published three piano sonatas, his first.

His experience in performance began to widen during the next two years after his appointments to the posts of assistant organist and rehearsal harpsichordist for the theater orchestra. As harpsichordist, he also acted as assistant conductor. At the age of 14, he droped out of public school to spend all his time in music. When not busy at his duties, he took lessons, studied and practiced. In 1785, he started giving lessons himself. The court musicians with whom he worked and studied were highly impressed with his talents and it was predicted he would become a "second Mozart."

Beethoven's First Trip To Vienna

In 1784, Maximillian Franz, brother of Emperor Joseph II of Vienna, became Prince Elector of Cologne on the death of Maximilian Friedrich, the previous ruler. Maximillian Franz ended the Bonn court opera but continued other musical activities. Recognizing the potential greatness of Beethoven, in spring 1787 he sent the young musician to Vienna for more advanced training. Beethoven's pleasure over the opportunity to study in Vienna was clouded by his concern for the health of his mother who had contracted tuberculosis. While in Vienna, Beethoven met Mozart and played for him. Mozart was impressed by Beethoven's skill in improvisation. It is likely that Beethoven also had some lessons from Mozart. Beethoven's stay in Vienna was ended when Beethoven had to return to Bonn because of the death of his mother in July 1787.

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> "

Beethoven Meets The Stein Family

During Beethoven's return journey from Vienna, he passed through Augsburg where he met the Stein family. According to Newman, ("Beethoven's pianos versus his piano ideals," *Journal of the American Musicological Society,* XXIII 1970, p. 484) Beethoven's early experiences with pianos were similar to those of Mozart 10 years previously. Beethoven had become familiar with several Stein pianos at the Bonn court. It was reported he expressed a preference for Stein over Spath pianos as early as 1781. He seemed to be as pleased with the Stein pianos in Augsburg as Mozart had been. After his return to Bonn, he may have been given a Stein piano by young Count von Waldstein, who became his lifelong friend and patron. It was a custom of the time for the wealthy upperclass to support talented students with gifts and monetary grants. About the time of Beethoven's return, a letter in the periodical *Cramers Magazine* addressed from Bonn stated "The piano is greatly admired here. we have several instruments by Stein of Augsburg....the young Baron von Gudenau plays the piano forte splendidly and so does the young Beethoven."

Beethoven's Last Years In Bonn

Beethoven resumed his place as a court musician. In addition to his previous duties, he now also played second viola in the court theater orchestra. Meanwhile the death of his mother had left him the responsibilities of caring for his two younger brothers. Their father, seriously addicted to alcohol, had lost his voice and was not capable of looking after his young sons properly.

Beethoven moves to Vienna

In 1792, Beethoven finally had the chance to leave Bonn permanently and settle in Vienna, the

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musical capital of Central Europe. The move came as a consequence of Haydn's stop in Bonn in 1790 while traveling to London and possibly again in 1792 while returning. Haydn, shown some of Beethoven's composition, praised the work and invited the young composer to come to Vienna to study with him, a great honor coming from Europe's leading living composer. Prince Elector Maximilian Franz readily gave his consent to Beethoven's departure and in addition he decreed that the Bonn court would continue to pay Beethoven's salary for two more years to give him time to earn enough to maintain himself. Beethoven also received additional support from Count von Waldstein. Beethoven never returned to Bonn. The prince elector left when the French seized Cologne in 1794. Cologne and Bonn were in the territory later annexed by Prussia as the Rhine province in 1814-15.

Biographers consider Beethoven's first two years from 1792 in Vienna to be the last of his "student" period. During these first years as he studied with Haydn and others, he soon became well known and very popular as a pianist performing at parties of the highest levels of Viennese society. His first public appearance at a concert at the Burg theater, Vienna, in March 1795 marks the start of his "virtuoso" period when he began to write his great piano sonatas and concertos. He had previously written only a few piano compositions in addition to his first sonatas published in 1782.

The Stein Family's Last Years In Augsburg

Although Beethoven acquired pianos built by other makers at different times during his years in Vienna, he and the Stein family developed and maintained a close friendship. When they had first met in Augsburg in 1787, Johann Andreas Stein had begun training his daughter, Maria Anna or Nanette, 1769- 1833, and his son, Matthaus Andreas, 1776-1842, to assist him as instrument makers. During the last years before the death of Johann Andreas at the age of 64 in 1792, the children became actively engaged in running the business and were fully competent to continue.

At the time of Stein's death in 1792, the total output from his shop in Augsburg after 40 years of existence added up to about 700 claviers. The pianos built after 1773 all contained the escapement action Stein had introduced in that year. The most important later change in design was the adoption of foot pedal- operated mechanism for damper lift and *una corda* shift in 1789. He had used knee pedals previously.

Stein built at least two more experimental combination instruments in 1783 in addition to the small number made earlier, (*Journal,* March 1987, page 22 and April 1987, page 21.) He made another "vis-a-vis flugel," a huge combined grand piano- harpsichord with the piano keyboard on one end and the double harpsichord keyboard on the other end. This instrument, presented by Emperor Joseph II of Austria to King Ferdinand of Naples is now owned by the Naples Conservatory. Stein's other 1783 experimental instrument was his *saitenharmonika* or "string harmonica." This was a bichord piano with an additional "spinett" string possibly pitched an octave higher, for each pair of unisons. The keyboard could be shifted to strike the "spinett" strings alone to produce a bright tone of different character as a result of the sympathetic vibrations of the normal strings.

Nanette Stein's Training

Stein had trained his children as performers as well as instrument makers. Nanette was known as a child prodigy and played her father's pianos often in public performance. When Mozart visited Augsburg in 1777, Nanette, then eight years old, played the piano for him. In a letter to his father, Mozart described his reactions. Although he made a number of critical comments about her playing, he thought she had talent. Nanette grew up to become a woman of wide accomplishments. She was not only an excellent pianist but a singer and woman of letters as well. In addition, she had inherited her father's practical intelligence and had become thoroughly familiar with the mechanics of piano building. She is the only woman to achieve prominence as a leader in the field.

Nanette's Marriage And Move To Vienna

In 1793, Nanette married Johann Andreas Streicher. Streicher, who had grown up in Stuttgart where he had been a boyhood friend and classmate of Schiller, the great German writer, was a professor of music in Vienna at the time of his marriage. Streicher gave up his job now to join Nanette and her brother. They moved to Vienna in 1794 where they began to build pianos. In order to benefit from the fame of the Stein name, the partnership was called *Frere et Soeur Stein.* It did not take Streicher long to learn and he was soon able to share fully in running the business.

The move to Vienna proved a wise decision. Stein pianos retained their prestige as the Steins and Streicher made improvements to keep up with the progress in piano design. The family friendship with Beethoven was renewed and grew into a warm personal relationship in the following years.■

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Calendar Of Coming Events

Date	Event
* July 20-25, 1987	**30th Annual Piano Technicians Guild Convention & Institute** Constellation Hotel, Toronto, Ontario, Canada Home Office; 9140 Ward Parkway; Kansas City, MO 64114; (816) 444-3500
July 24-26, 1987	**International Association of Piano Builders and Technicians Biannual Conference** Constellation Hotel, Toronto, Ontario, Canada Home Office; 9140 Ward Parkway, Kansas City, MO 64114; (816) 444-3500
Sept. 19, 1987	**Connecticut One-Day Seminar** Sohmer Piano Co., Ivoryton, CT Vivian Brooks, 376 Shore Road, Old Lyme, CT 06371 (203) 434-0287
Oct. 2-4, 1987	**Florida State Assembly of the Piano Technicians Guild** Orlando, FL David G. Taylor; 1909 Mae St.; Orlando, FL 32806; (305) 898-9266
Oct. 9-11, 1987	**Ohio State Conference** Greater Cincinnati area Jack Krefting; P.O. Box 16066; Ludlow, KY 41016; (606) 261-1643
Oct. 16-18, 1987	**Texas State Seminar** Hilton Hotel, Wichita Falls, TX Jimmy Gold; 2101 Walnut; Duncan, OK 73533; (405) 255-5804
Nov. 6-8, 1987	**North Carolina Conference** Black Mountain, NC Jeff Owens; P.O. Box 903; Shelby, NC 28150; (704) 482-7119

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At the Council Meeting of the Piano Technicians Guild Auxiliary on July 29th, 1986 our president, Ginger Bryant presented a proposal on behalf of the board, that the Auxiliary sponsor a scholarship in order to help up-and-coming piano students and promote awareness of the Piano Technicians Guild and Auxiliary.

Ginger Bryant then moved to affiliate with the Piano Technicians Guild Foundation for the purpose of establishing a scholarship to be awarded to an undergraduate student of music on behalf of the Piano Technicians Guild Auxiliary. Ginger's motion was seconded and unanimously carried.

A brief note to elicit contributions to this scholarship fund was inserted in the dues notices and the response to this appeal was most commendable. We are pleased to list the names of the contributors to the Piano Technicians Guild Auxiliary scholarship fund. Contributions to Auxiliary Scholarship Fund received from:

The Auxiliary Exchange

President's Message: Ten Commandments for a Successful Organization Or "The Duties of Your Elected Board"

The Member...

...is the most important person in any organization.

...is not dependent on us, but we *ARE* dependent on him/her.

...is not an interruption of our work, but the purpose of it.

...does us a favor when they write. They deserve an answer.

...is not someone to argue with or match wits with, but someone to whom we should listen.

...is not a part of our organization, but *IS* our organization.

...is a person who brings us their wants and needs. It is our job to fill them.

...is deserving of the most courteous and attentive treatment we can give them.

...is not merely a statistic, but a flesh and blood human being with feelings and emotions similar to our own.

Our Members...

...are the life-blood of this organization.

Ginger Bryant

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During this warm humid weather, we submit additional humorous answers to test questions and essays on music, just to help you lighten-up and smile. They are reprinted from the Newsletter of the Kodaly Association of Southern California.

Henry Purcell is a well-known composer few people have ever heard of.

Probably the most marvelous *Fugue* was the one between the Hatfields and the McCoys.

One of my best friends (who will remain nameless) does not like music. In spite of people like her, most concerts these days stay tightly populated.

Panissimo is a spare word for when you cannot think how to say "shhh".

Tempo is how fast people are playing when they can no longer be measured in miles per hour.

Gregory of the Gregorian Chant, lived from 540 to 605, but I forget whether it was A.C. or D.C.

My favorite instrument is the *Bassoon.* It is so hard to play, people seldom play it. That is whey I like the bassoon best.

The *Harpsichord* is a very rare instrument today. If you ever want to see it, you must peal your eyes.

Paganni was a great vaili...vyalin...vilia... fidler.

Although the Blue Danube was written by *Johan Strass's Sr.'s* son many people did not know whether it was written by his father's son or his son's father or the other way around.

The music I like best is *Peter And The Wolf* because it does things most music cannot do such as chirp-chirp-quack and grrrrrrr.

Opera is a song of bigly size. Xarmen contains everything a good opera should have such as characters. One of Puccini's most famous operas is "Filet Mignon." In the last scene of Pagliacci, Canie stabs Nedda who is the one he really loves. Pretty soon Silvio also gets stabbed and they all live happily ever after. I have found that the word libretto is easier to pronounce than to tell what it is.

When a *Singer* sings, he stirs up the air and makes it hit any passing eardrums. But if he is good, he knows how to keep it from hurting. Music sung by two people is called a duel. I know what a sextet is, but I had rather not say.

Schedule For PTGA Program — July 20-24, 1987; Toronto, Ontario

July 20, 1987 — Monday

9:00 a.m.	Executive Board Meeting Luncheon
9:00 a.m.	Craft Class — Auxiliary Room: Flower Arranging — Ruby Discon
2:00 p.m.	Business Class — Auxiliary Room: New Taxes In The U.S. —Randy Potter
7:30 p.m.	Convention Opening Session

July 22, 1987 —Tuesday

8:30 a.m.	Auxiliary Opening Assembly
9:00 a.m.	Welcome to Toronto —Mike Filey, noted speaker and Toronto radio personality
9:45 a.m.	Member-At-Large meeting combined with get-acquainted coffee.
10:30 a.m.	Auxiliary Council
1:00 p.m	Bus leaves promptly for Parkwood — Estate of the late Col. and Mrs. R.S. McLaughlin. Tour of home, "High Tea" in formal gardens.

July 22, 1987 —Wednesday

9:00 a.m.	Optional Tour Auxiliary Room open for craft class With Bert Sierota
7:30 p.m.	Convention Awards Banquet

July 23, 1987 — Thursday

9:00 a.m.	Refinishing Class Andre Bolduc, RTT — PTG class instructor
10:00 a.m.	"Revitalizing PTGA" discussion — Moderated by Julie Berry
12:30 p.m.	Installation Luncheon
4:00 p.m.	Post Board Meeting

July 24, 1987 — Friday

9:00 a.m.	"Life of a Piano Tuner In The Soviet Union" by the fabulous Isaac Sadiguraky, RTT PTG instructor
12:30 p.m.	Convention Closing Luncheon

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For those of you planning to bring children to the International Convention in Toronto, we have investigated the availability of child care.

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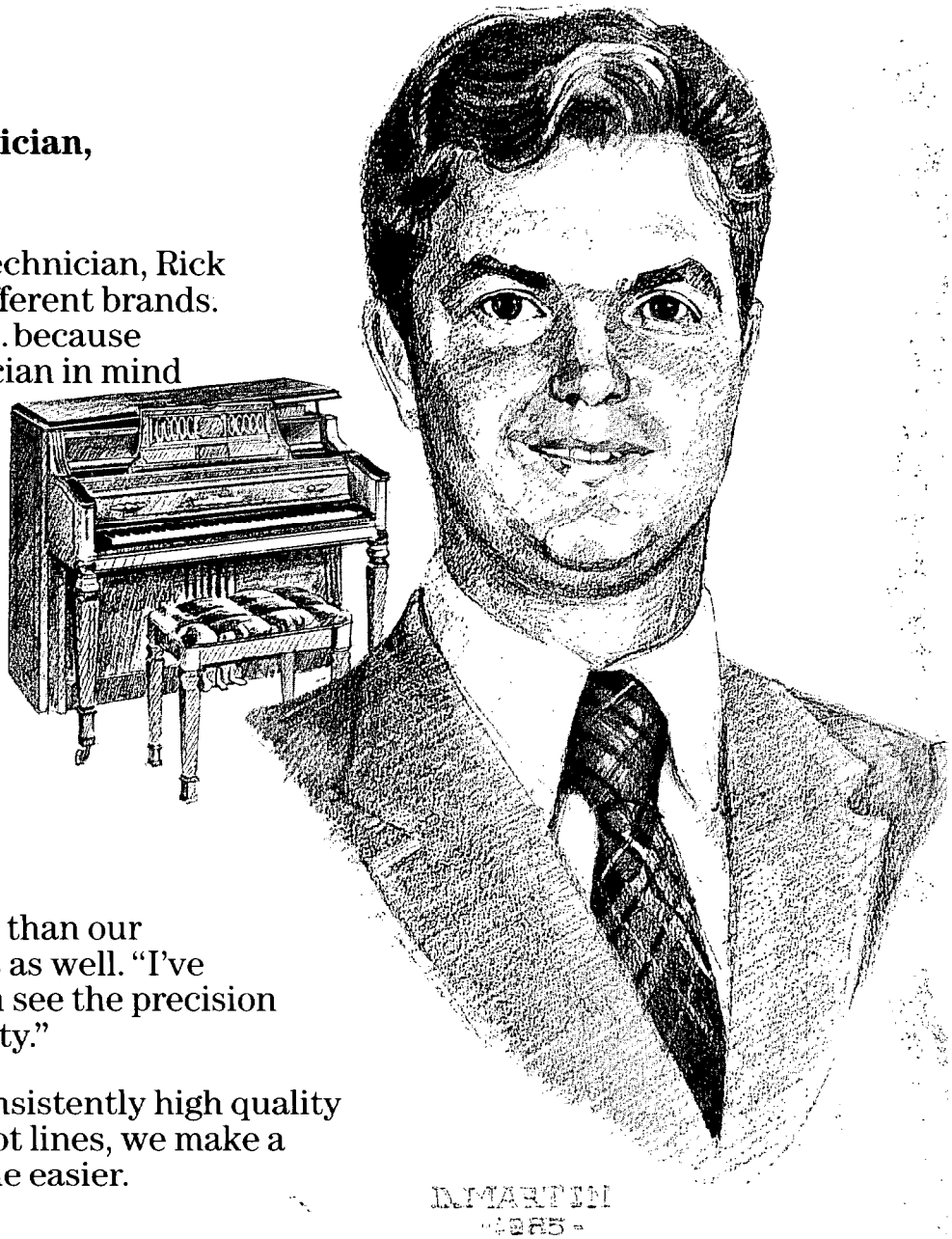

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July **UPDATE** *1987*

Balance Sheet

The following statement of the Guild's assets and liabilities reflects our status as of Dec. 31, 1986:

Assets	**1986**	**1985**
Current Assets		
Cash — checking account	53,430.32	39,146.44
Cash — savings/IAPBT	4,564.66	3,120.35
Investments — money market	127,909.66	136,461.84
Investments — certificate of deposit	150,000.00	100,000.00
Emergency reserve fund	29,633.92	22,346.11
Accounts receivable	278,177.87	275,688.13
Interest receivable	4,814.00	1,828.43
Inventory — merchandise	12,436.80	15,213.80
Prepaid expenses	8,453.56	5,653.62
Total current assets	669,420.79	599,458.72
Other Assets		
Furniture, fixtures, equipment	31,487.25	29,725.25
Depreciation of furniture, fixtures and equipment	[26,750.00]	[24,886.00]
Organizational costs	1,450.00	1.450.00
Total other assets	6,187.25	6,289.25
Total Assets	**$675,608.04**	**$605,747.97**
Liabilities & Equity		
Current Liabilities		
Accounts Payable	19,468.26	13,936.03
Chapter funds payable	42,471.85	32,985.50
Film deposits	700.00	300.00
Unearned income	357,250.90	349,528.50
Deferred compensation — annual	2,500.00	6,000.00
Total current liabilities	422,391.01	402,750.03
Deferred compensation — long-term	0.00	2,500.00
Members' equity	200,497.94	80,739.17
Net income/loss	52,719.09	119,758.77
Total liabilities and equity	**$675,608.04**	**$605,747.97**

Note: assets and liabilities include membership dues billing for coming year.

Chapter News and Notes

Dale Heikkinen
Chapter Management
And Achievement Committee

Rhode Island

"Merrimack in perspective: an editorial," Wade Johnson.

Ever since 1922, an organization called the New England Hospital Assembly, made up of hospital administrators, has been conducting an annual trade show and educational seminar for hospital managers and department heads. Your new editor (Wade Johnson, in the new Rhode Island newsletter called *Good Vibrations)* in his former career, was able to observe and experience it at close range. Over the years, it has been so successful and highly regarded that its activities have been mirrored by the American Hospital Association's annual convention, and in other regions countrywide.

Most recently, however, this writer has been experiencing the educational activities of the Piano Technicians Guild, through attendance at four regional seminars and four national conventions since 1981. And we would have to say that we have been continually astounded at the high quality, the relevance and the professionalism of most of the material presented by the volunteer faculty members at these meetings. We seldom saw anything to equal in the hospital field. As we gradually gain more experience and knowledge in piano technology, we appreciate and seen the quality and benefits of this education even more than we did back in 1981. Clearly, through this program, many of the Guild's most talented members are making a great contribution to our field. We believe it deserves our maximum support.

Connecticut

"Tool kit olympics" was the technical program for the January meeting of the chapter. It was a semi-serious, educationally competitive game goverened by the following rules:

1. Each chapter member brought his/her basic tool kit (i.e., what one would carry into a customer's home for a tuning job) to the meeting.
2. He/she would set up the kit for display along with all of the others receiving a number to identify the kit so that could remain anonymous.
3. All members then had the opportunity to see just what it was that their comrades carried in their little bags or boxes as they went about making a living tuning pianos.
4. Prizes were awarded in various categories. Winners were decided by secret ballot after everyone had a chance to inspect the entire display.

There were more than 20 tool kits on display. The final results in four different categories were as follows. most practical: 1. Vivian Brooks, 2. Jon Lasse; best equipped: 1. Charlie Hubert, 2. Vivian Brooks; most compact: 1. Vivian Books, 2. Chris Robinson; most unique: 1. Wally Brooks, 2. Jim Birch.

Everyone came up with some new ideas for their own kits

Continued on next page

In Respectful Memory...

Leroy Sturdevant became a piano technician after studying with the late Fred Hopkins upon his retirement from the United States Postal Service. After terminal illness was discovered, he was honored by a sustaining membership by the Kansas City Chapter.

Leroy died June 1, 1987. He was one who was always willing to help others, yet humble enough to ask help of his fellow technicians — just a small cog in the small PTG machinery that helped hold us together. He was a charter member of the Kansas City Chapter and will be missed by his family, a host of friends and acquaintences and by many members of the piano Technicians Guild.

-Ernie Preuitt

Chapter Mailing

The June mailing to chapter presidents included information regarding: members delinquent in their dues who are being dropped from the Guild roster, Council delegate check-in, changes in Home Office staffing and becoming a Certified Tuning Examiner.

Attached were a message from President Hawkins regarding the Chapter Presidents Symposium to be held during the convention; a current budget for 1987 and 1988; more information on the Piano Technicians Guild film project to be discussed in this summer's Council; a Certified Tuning Examiner consent-to-serve form; and a Guild library film order form.

Corrections

Some very important people were inadvertently omitted from various listings or incorrectly listed in the most recent Guild membership directory:

Oklahoma chapter member Carol Bienemann was omitted from the chapter's listing while another chapter member, Robert Franks, was listed in the chapter roster but not the alphabetical listing.

Charter member (and first co-president) Errol Crowl was omitted from the Boston Chapter roster.

In Nebraska, chapter members Richard West and Jeff Stickney were omitted from the chapter roster.

In the alphabetical listings, Allyn M. Wassil of Stevensville, ON, was listed by his first name, rather than his last.

Chapter Notes...

after viewing this display, writes Editor Bruce MacLeod. However, "Did Brooks, Ltd., pay off the judges?"

"Rescaling: a mini-technical," by Bruce Clark

Bruce Clark presented a brief and very interesting mini-technical, writes Bruce MacLeod. He had set up, side-by-side, two Sohmer grands, each 5'7". One of them was the same model which Sohmer has used for many years; the other had been rescaled, including re-shaping and moving the bridges and cutting away a portion of the plate (!) in order to bring the bass bridge closer toward the center of the soundboard. The difference in tonal quality and smoothness between the two was quite remarkable. The tone of the rescaled model had much more roundness and clarity, and the breaks were very smooth.

It was very educational to witness such a clear comparison and to judge for oneself what the tonal effect of rescaling is. Bruce's technical given last year showed us *how* he arrives at new scalings, using a computer to weigh the various parameters involved. This presentation showed us a fine example of the end result of rescaling.

Syracuse

The March meeting was held at Grand Workshoppe in New Hartford (Utica), NY. The well-attended session on polishing was conducted by Joe Karwacki. It ranged from bringing dingy old pedals to a high glittering shine to making an ivory replacement smooth, white and glistening. The method for bypassing a costly commercially bought polisher by using a motor and arbor was shown by Joe. How to select wheels and compounds was accompanied by how to store, separate and use them. The practical and useful applications of polishing and cleaning were emphasized and all who were present seemed to have been very pleased with the presentation.

Erie, PA

Bob Russell gave the Erie Chapter a preview of his new key bushing class. His method is fast and accurate. This slide class will also be given in Toronto.

Washington, D.C.

"The Steinway lid prop prop," Michael Travis.

Reading Ben McKlveen's recent article in the Cincinnati newsletter in which he extolled the virtues of the famous Steinway upright lid prop reminded me to write up this note. While I agree with Ben that it is the overall best at what it does, I still remember a few occasions when I'd be concentrating on a tuning only to be rudely interrupted by a raucous cascade of lid, prop, Accu-Tuner and tuning hammer. This tends to happen with pianos that have the tighter tuning pins and/or loose hinge screws and/or a wider-than-usual gap between the lid and the back when open.

Travis' remedy: 1. Don't use the lid prop if wall is available. (Ed: don't use wall if you don't protect it from getting marked). 2. Tighten hinge screws. 3. Install one or two grand rubber mutes as a wedge between the lid and the prop.

More tips for the toolkit: Those tiny 1/4 oz. plastic bottles that eye drops often come in can be cleaned, dried and filled with pharmaceutical or scentless talc. The little bottles fit well in little toolkits, and the talc can be either squirted or tapped out just as nice as you please.

Richmond

"President's message," by Tom Cobble.

Certified: 1. vouched for; guaranteed. 2. having a certificate.

Certify: 1. to declare true, accurate, *certain.* 2. to guarantee the quality of worth. 3. to safeguard.

Certain: 1. determined, fixed, settled, sure. 2. not to be doubted. 3. Unquestionable. 4. reliable, dependable.

There are more listings in the dictionary, (there always are) but what is it trying to tell us? Those of us who are Certified Piano Technicians can feel a degree of accomplishment, but hopefully we feel a greater degree of responsibility.

For those of you who read this newsletter and are not in the PTG, and if you are doing qualified work, *then the PTG needs you!*

The Richmond Chapter PTG is a group of independent, free-minded people who sometimes have a hard time agreeing on what time of day it is, let alone difficult matters lit standardized testing procedures.

But we do believe that is a reason we do get together and talk, and listen, and disagree! This organization gives us the vehicle in which to do this, and that's when and where learning happens.

Central Florida

"Pianos in perspective," Allan Wright.

Recently I was asked if I would give a short lecture to a gathering of music teachers and I accepted — not without some slight trepidation, I must admit, used to being more the "unseen artist" most of the time as we piano technicians usually are. But, I'm happy to report that it went very well, and I would heartily recommend the experience to others — not only because of the feelings of accomplishment, etc., it can give, but also, what the heck, a chance to try to spread some technical gospel amongst piano teachers. What got me through my talk successfully was mucho preparation, beforehand, and I've decided that I would put all these hours of work for a double purpose by sharing with you the draft of my speech. Perhaps it might interest others of you to see how one piano technician chose to approach the rather unlimited possibilities of a 20-minute talk to piano teachers. If you would like a copy of the text, please contact me at Route #1, Box 320E; Mount Dora, FL 32757.

Northwest Arkansas

"From the notebooks of..." Denele Campbell.

I recently was called to service a Kimball console which is about five to eight years old. The piano was down in pitch, and after raising pitch and tuning, I could tell I needed to put in another tuning and didn't have time that day. So I scheduled another tuning for a week later.

At the follow-up tuning, as I rechecked the treble and got ready to leave, I broke a string, A5 and B♭5. Of course, I was just thrilled with

Continued on next page

Chapter Notes...

this development, and began to attempt removal of the action so that I could reach the bearing pins and hitch pin (behind the keybed, naturally). The Phillips screw heads would not budge, but after about 15 to 20 minutes of muttering and sweating, I finally managed to get the middle and left end screws removed. I could not get the right end out, or even to move, even after tapping, wedging and various other semi-desperate measures. Additionally, the three-inch long screws I did get out of the middle and left end were noticeably curved, to about a 25 degree angle. I assumed that this accounted for the horrors of my removal struggle, and assumed this was the first time since leaving the factory that the action screws had been touched. I went ahead and pulled the action out at an angle, with the right end still attached, and got enough room to put the string in. Then I put the action back, put some soap on the screws and put them back in with great ease, even down through the angled part. However, when I ran my (hopefully) last check across the keyboard, I noticed the hammers bubbling rather badly and discovered that I had severe regulation problems — there was lost motion at the capstans. This was not there before the action removal. I could not figure out how or why this had happened, but I assume that the action was forced down after it was screwed in at the factory, which bent the screws and brought the action closer to regulation. The capstans were considerably higher than I would consider normal. Anyway, I had to raise all the capstans, since I could find no other way to reposition the action. I still don't understand exactly what the deal was here, but the customer was not really favorably impressed with the extra charges, even though I gave them a considerable discount from my regular hourly rate.

Oklahoma

Giving your first technical can be a very exciting prospect, even more so with a specially designed new tool. The program: "Key rebushing — a satis*factory* method," by Ross Trawick, editor of the newsletter, *Sooner Tuner Times*. He discussed the problems and solutions of rebushing keys. He also discussed the use of a relatively new tool specially designed to make this job easier, more accurate, and a little less time-consuming, that until only a few years ago was not made available to the independent piano technician.

"Meeting notice," submitted by Carol Bienemann.

"See you." Breathe on the circle. If it turns green, you have the flu. If it turns blue, you have a cold. If it turns yellow, your arthritis is acting up. If it turns red, you have tired blood. If it turns pink, you have a hangover. If nothing happens, you're healthy and well enough to attend next week's meeting. See you there!

Dallas

"Some thoughts on restringing," by Thom Tomko.

Ever wonder how you could restring that grand piano with perfectly equal turns on the tuning pins throughout the instrument? For those with the time and the inclination, here's a method that requires a little time with a programmable calculator. The TI-66 is easy to program using basic algebra terminology; you enter the equations pretty much as you write them on paper. It cost about $50, complete with instruction book, and will do much more than most of us can begin to comprehend.

Once you have the program in the calculator, merely assign memory for each variable and enter whatever number you wish, push the "run" button and watch your result flash up in second. For this particular stringing problem, only four variables are needed: outer diameter, speaking length, and note number (1-88). With a micrometer and tape measure, you're in business.
Tuning pins are available in sizes #2 through #7 for grands, with the following corresponding average diameters: #2 — .282, #3 — .286, #4 — .291, #5 — .296, #6 — .301, #7 — .306. If you wish to achieve 2 1/2 turns, simply multiply the diameter by pi, and the result will be: #2 — 56 mm., #3 — 57 mm., #4 — 58mm., #5 - 59 mm., #6 - 60 mm., #7 - 61 mm.

However, elongation will result in more turns than you planned. To know how much leader is initially required, you will have to calculated elongation for that string. It may not be necessary to do this for every string, but a careful estimate should be calculated for perhaps every fourth note if you wish to do really precise work.

I suggest driving all pins until the eye is 3/8" above the plate, the eye pointing longitudinally (front to back). Select an approximate leader length based on the above estimates for each pin size, then subtract the elongation from that measurement. Now you will have a very precise leader measurement, which at tension will give you exactly 2 1/2 turns on the pin.

Elongation is calculated by two formulas, one for plain wire, another for wrapped strings. Use inches for speaking length and wire diameter; after you have completed the calculation, convert to millimeters if desired by multiplying 25.4 mm./ inch.

e (plain wire) $= 7 \times 10^{-8} L^3 2^{(N/6)}$
e (wrapped strings) $= [(4.5 \times 10^{-8})(.89D^2) L^3 2^{(N/6)}] / d^2$

For simplicity, I have used "L" to mean the speaking length, ignoring the additional few inches from the agraffe to the pin. This error is not significant to our calculations.

As you start chipping up to pitch, drive the pins so that the bottom coil is 2-3 mm. above the plate. At pitch, all pins should exhibit precisely 2 1/2 turns and have all eyes aligned.

If anyone's program cranks out weird elongation predictions, please pick up the telephone and give me a call.

Heart of Texas

To those who know him closely, there are two words that probably describe him best, "Tool nut." Charlie Fry has toured his shop many times and describes that it is filled with gadgets you will not find listed in the supply catalogs. "He really has tremendous inventive abilities," writes Charlie. In addition to being the technican for Baylor

Continued on next page

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University, he has served as head of the Texas State Association as well as on committees at the national level. The June technical of the chapter focused on an explanation and demonstration of general repair procedures given by Danny Boone.

Bluegrass

"Looking toward your retirement" was the featured program for May at the Central Baptist Church in Lexington, KY. Keith Huffman and his daughter Ann Crowe presented the program. Keith, a retired RTT from Morehead, presented the financial considerations. Ann, who has a masters in social work in gerentology, has studied older folks and had many thought-provoking ideas of the problems older folks face. The entire program gave a balanced perspective of the financial, medical and social concerns for the retired and the elderly.

Cincinnati

"That elementary school piano," by Ben McKlveen.

There are several ways to make any vertical piano play better, short of giving it a complete textbook regulation. In the normal course of wear and tear, the piano action parts wander from the correct measurements. The level of the keyboard goes out. It sinks in the middle area into a kind of shallow dispan or saucer effect. Compression of the balance rail felts in this area, where most of the playing occurs, is responsible for this. The loss of level also causes the dip to get shallow. A companion to these keyboard problems is the settling of the hammer rail on its felt bumpers at the action brackets. This allows the hammer blow distance to expand beyond its normal tolerances.

The problems created by these twin dimensional changes are loss of power, very late backchecking, poor repetition and sometimes bobbling hammers. Note that there is no change in the escapement. It just happens later in the key travel, usually at the very bottom on the downward stroke of the key, since aftertouch is gone at this point. Dampers are not greatly affected. Backchecking is late, but, once the dip is corrected, the checking will return to normal.

It remains, then, for the technician to do only three things to get the action back into acceptable regulation. First, re-establish the key level. This doesn't have to be done with a straightedge. It is best accomplished with a dip block. Simply remove a few keys around the crosspieces of the keyframe and shim up the balance rail until the dip in the middle of the keyboard is correct again. (Remember, some models of pianos use a series of flathead screws under the balance rail to regulate key level.) Second, correct the hammer-blow distance by putting felt shims under the hammer rail rest felts. Third, take up any lost motion created by these procedures.

We all know that key dip is measured at a universal 3/8" or your favorite variation near this measurement. But how do we remember the correct hammer blow distance? A good rule of thumb is the 5-6-7 rule first advanced as a regulating trick by my friend Bob Russell during one of our many cooperative teaching efforts several years ago. The rule for blow distance is this: 1 5/8" — spinet pianos; 1 6/8" — consoles and studio pianos; 1 7/8" — old upright pianos.

Keep in mind that pianos will function well if the blow distance is a little short. You may experience a slight loss of power but this is not significant when playing a spinet or console. Far more deadly are the problems created when dip is shallow and blow distance is long.

The application of these suggestions should take no more than 15 minutes to a half-hour and can be done easily, on the spot, before or after tuning. The charges for this service should be modest in comparison to a full regulation procedure, and the improvement in the performance of the piano is dramatic.

Milwaukee

"President's message," by Chris Terske.

Professionalism — professionalism is a word...and using the word professionalism means we try to do things professionally...this doesn't mean being unprofessional...but being as professional as a professional can be..."can be" is the key and the key can be professionalism...not unprofessionalism...but professionalism. Sometimes we might have a tendency to do something unprofessionally...but this is not professionalism...this is unprofessionalism...we should not be unprofessional in our profession but professional. Don't be unprofessional. "Don't be" can be the key to not to be unprofessional, you se. Being a professional is important for many reasons...important is a word...and using the word important in our pr...zzzzzzzzz (Editor's note — looks like we lost Chris, but we'll try to tune in on him a little late. On with the new Milwaukee issue.)

Technical tips from the notebooks of Richard Kingsbury:

For squeaky balance rail bushings, a drop of WD-40 near the pin can help.

Should the repetition in new verticals be a problem because of little or no clearance between jack and butt felt, shimming up the hammer rest rail at each action bracket with one or more pieces of self-sticking name board felt can give enough lost motion to allow jacks to slip back under butts.

For tight bushings, a solution of denatured alcohol and water (50-50) saturated with Ivory soap chips will shrink bushings. A hair dryer can speed up the process.

For continuing tightness, a solution of naphtha and mineral oil (8 to 1) can help.

On any new pianos, a zing or buzz as the hammer hits the strings can be caused by uneven contact, causing the strings to vibrate out of phase. To solve this, sand the heaviest string mark with an emery board.

Madison

Virgil Smith highlighted the April meeting of the chapter with his explanation of his sensible approach to tuning, in which he lets the piano tell him how much stretch it should have. He also explained his use of checks to obtain very accurately stretched octaves.

He also raised questions about our assumption that all beats are always at the unison. We probably hear, also, beats of the whole sound at the octave. If that is indeed true, then we may be able to

continued on next page

Chapter Notes...

change the inharmonicity of a note by voicing it, which lessens the input of the higher partials. Then, also, we may find that inharmonicity changes through *tuning*, and also through room acoustics, which may increase or decrease the input of the higher partials.

After a short intermission, he explained his method of setting a temperament D3-D4 from A which makes greater use of minor thirds as checks than most other methods.

Central Illinois

"Do your customers....," by Cindy Strehlow.

Do your customers ever tell you things like "I'm tone deaf, anyway" or "gee, I never play those notes up there." Well, if not, at least you have figured out that 90 percent of our customers don't know the difference between a good and a bad tuning, let alone the difference between our "personal best" and "good enough for today." Oh? You say you don't know the difference either? Then read no further— this month's column is aimed at those of us for whom there is a big difference. We are weak, and we are tempted to do less than the best we can when we know we can get away with it.

Whether or not we really do "get away with it" is not the issue, because sometimes you do, but sometimes you don't. It's so awful to get caught that it negates whatever real or imagined benefit you derived from taking too many shortuts. If Lucifer is still sitting on your shoulder and giggling, just consider the example of school tunings. The reasons for the shortcuts are many: a usually reduced fee, short notice which produces short tempers, pianos in such terrible condition that even you can't tell the difference between a good and a bad tuning, and of course, "those kindergarten kids don't sing worth a darn anyway." However, even if all these reasons apply, consider that you don't know everything about the teacher who uses the piano. Since most districts don't hire special music teachers these days, the teacher who has a piano in his or her room is often a real musician. If you give that teacher a reason to doubt you, the above-mentioned condition of the piano will no longer be the friend you thought it was when you were rushing through the treble section. That's right — it's *all* your fault.

Now that I've convinced you that you must change. (TV evangelists, eat your hearts out!) I will — yes! — tell you how to do it. First of all, of course, you have to be able to catch *yourself* at it, which is not as easy as it sounds. A few embarrassing episodes can speed up this process, but if you pay attention you will notice that there is a pattern to your sloth. Sloth Recognition will soon be second nature. Now, to strike it out (the sloth) imagine that a colleague is going to follow you on the job for some reason. This works! The obvious choice would be one you respect a great deal, however imagining one that you have bad feelings towards (anyone who can't think of one should have stopped reading at paragraph one) can be quite effective. For example, who would want to be caught at being a jerk by another jerk? This is at the very least humiliating and what's more, very confusing, as in "who's the real jerk?" Another good choice would be a know-it-all customer with lots of contacts in the music circles of your community. How about the one with perfect pitch?

You get the picture — now get motivated!

Twin Cities

"One-sided conversations," by Dario Biagiarelli, Kirkville, NY.

In my many years as a woodworking hobbyist, I've heard quite a few comments and questions from visitors to my workshop that have left me red-faced and slack-jawed. Here are a few of the best"

"Hey, I hear that woodworking is your hobby — you'd probably enjoy putting up some shelves in my closet."

"Why do anything by hand when you have all these machines?"

"This bandsaw should be able to cut up railroad ties. I have somethat I'd like to make into benches."

"I'd like something made out of this dead tree that's standing in my yard."

"If you didn't spend so much time messing with your tools, you could make more stuff."

"You wouldn't have to go through all that trouble if you used a hot-glue gun."

"You could make a fortune as a woodworker. Like that jewelry box — you could get five bucks for it, easy."

"Wouldn't a nail hold it just as good?"

"That must have taken you all weekend to make"

"I bought a beat-up old rocking chair at a garage sale — you think you could cover it with real skinny wood?"

"That's nice, but I'll show you the one I just bought for $11.95."

"I used to make stuff like this in high school shop class."

"The best way to make a tight joint is to make the opening a little small, then whack it together with a hammer."

"What say I come over some night after supper and we'll make one of those."

"Gee, my wife sure would love one like that — her birthday's next Tuesday."

"New resource — cassette tapes."

The chapter is trying something new. Cassette tapes, a resource aid designed especially to help the out-of-town members who have trouble attending, are being made of the technical presentations given at the chapter's monthly meetings. These cassette tapes are available for checkout starting with the March meeting.

Proposed checkout policies are:

1. $10.00 damage security deposit at time of check-out which will be refunded if the tape is returned in good condition.

2. Check-out time is two weeks with an additional two weeks' maximum allowed if there is no waiting list.

3.Tapes will be kept for one year, then they will be erased and reused.

4. Members may purchase copies of meeting tapes for $10 to cover cost of tape and mailing. They your tape may be returned for re-recording of another meeting.

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Chapter Notes...

St. Louis

"Car phones," by Willem Blees.

The latest technology in communication is the cellular car phone. But the question is, is it worth the expense? It is always nice to hear that someone else has spent the money to find out.

While I was in Minneapolis (for the Central West Regional Seminar), I talked with two tuners who have a car phone. One told me that the cost of the phone is about four tunings per month. He then told me that on the average, he gets about four new tunings per week using the car phone. He has a portable model and takes the phone in the house while he tunes.

The other tuner likes the car phone because he does a lot of recording studios and this allows him to be reached at a moment's notice. He does not have a portable model, but his car horn sounds when there is a call for him. Although he does not have accurate figures, he said the income far exceeds the expense.

Both men have their business phone forwarded to their car phone. One drawback with this is that they not only get customers who want a tuning, but also insurance salesmen, price shoppers, and wrong numbers. And when you are paying for each call you get, that adds up. But both men agreed it is worth the expense.

Kansas City

"Pedal rod noises," by Charles Muse.

A common noise problem exists (especialy on verticla pianos) when the damper rod pin felt bushing or rubber grommet no longer insulates the pin from touching the damper rod.

One repair that seems effective for me is to remove all parts of the felt or rubber, then put a thick center rail bushing over the pin that is inserted in the dowel, then push a piece of plastic tubing over the pin. If the plastic tubing is the correct size for whatever pin or nail you use in the dowel, it should be tight enough not to come off.

Pet stores sell the plastic tubing as filter equipment, or there are various sizes available at the hardware store or automotive parts store.

Wichita

The chapter reports on a very busy series of events. They have just finished a series of chapter meetings with local piano dealers. They have been treated to one-day seminars by Samick (William Riley) and by Steinway (Bil Garlick). In addition, two technicians have give lectures to four separate groups of piano owners in the Wichita area on care of the piano.

Montana

Planning took place for the chapter's first ever semi-annual spring meeting which was held April 26 in Helena. The chapter hopes to meet twice a year on a formal basis. Technical tests were administered to two potential candidates which qualified them to take the tuning exam at the Pacific Northwest Conference in Yakima. The chapter reported considerable support for the Regional Test Center concept as a result of a poll requested by RVP Jim Bryant. Peter Briant gave a one-hour presentation on the piano to members of the Great Falls Symphony Auxiliary in February.

South Bay

Notes from a really interesting program in May given by George Defebaugh that covered a lot of things...

1. Introduction of a key touch controller, designed by Mr. Saito, Hamamatsu, Japan, which is now available for installation in uprights and allows for considerable variation in the gram-weight touch of an action with the flip of a lever.

2. New developments in the Kawai line, including molded ABS plastic butts with self-tapping screws that reportedly never work their way out.

3. A new aluminum hammer-hanging jig which comes with its own how-to video.

4. Hints on voicing Japanese hammers: 1. when needling, keep your thumb over the strikepoint, thereby not voicing it. 2. squeeze each shoulder twice with non-grooved pliers, then needle in the trough, 25-30 times each side, with a single needle. 3. shape one hammer at a time, with 50-60 grit garnet paper. 4. use 150-grit aluminum oxide paper to strap the surface

Orange County

Bob Jackman presented the May technical on steps he takes to prepare a new piano. Some of the steps include checking action measurements, tightening plate bolts, rolling or stretching strings, listening for buzzes, and tuning. Bob spends anywhere from eight to 10 hours getting a piano in tip-top shape.

Santa Clara

The technical session for May was led by Bill Klein. The topic was profoundly motivated by a real-life predicament, a cracked piano plate. Part of the information was based on the advice and recommendations of experienced members around the Bay Area. He also researched a method for repairing cracked plates, in which one step utilizes the use of an exotic, space-age epoxy. The finished job is so well camouflaged that it probably wouldn't be noticed by the average customer.

Golden Gate

The April meeting consisted of a two-part technical program. The first, pinblock plugging, showed various stages of the repair. Conclusion, pinblock plugging, as one alternative, is sometimes less expensive, less time-consuming and in some cases, less risky.

The second part of the program, "Upright action restoration," was an abbreviated version of the one to be given in Toronto by Sid Stone and Vicki Nelson covering 1. estimating the repair job; 2. convincing the customer to have the work done; 3. removing and replacing the action; 4. replacement of felts and springs; 5. hammer shaping; and 6. squeaks and sluggishness.

Seattle

"Regluing old ivory," by Randy Rush.

In one of those casual conversations among technicians, a technical tip from Steve Brady concerned re-gluing an ivory that has

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Chapter Notes...

come off when the glue wafer on the key is still intact and unsullied by dirty fingers or the elements. Steve had mentioned that one could wet the glue wafer, slap the ivory back on, clamp it with a brass ivory clamp and heat the clamp just as you would with a new glue wafer. If the wafer is still fresh and uncontaminated, it will work as well as a new one.

Recently I was asked to replace a chipped ivory head. The old head was pried off with a sharp knife without resorting to heat or steam. What lay beneath was a good-looking wafer. I wetted it generously, stuck on a new ivory head, applied the clamp and heated it, thinking that it would probably hold fairly well, and at least was worth a try. When I checked it the next day, it seemed tight, but I decided I didn't like the fit of the replacement ivory and proceeded to put on another one. I was surprised at how tight the glue joint was — I had a difficult time prying it off with a sharp knife again. I used the same procedure with a new ivory and the next day it again seemed as tight as new.

All-day seminar

The April all-day seminar was a wonderful one. The technical portion was divided into two parts.

Tom Lowell, developer of the Component Downbearing Gauge, spoke clearly and intelligibly about how being able to read front bearing and back bearing separately is more informative than the traditional rocker gauge yielding a total, or net, bearing measurement. The newest version is made of high-quality plastic, and the bubble on the machinist level is easier to read and calibrate than in the aluminum versions. Further, the base is removable and the gauge can be used with a magnetic attachment to read the change in tilt of a bridge as you change nosebolts. Tom demonstrated this on a Kawai grand that Roger Gable donated for chapter use. Discussion on the importance of bearing readings in the overall understanding of crown and downbearing, and sound, touched off by Ed McMorrow, led to some interesting conclusions. First, a tool cannot substitute for a technical understanding of such a complex system as a piano. And secondly, better information from a better tool can lead to better understanding.

Joe Garrett appeared with boxes of bridges, and taught the class on how to remove, fabricate, and replace bridges. Some bridges are repairable on vertical pianos, sometimes only the cap needs replacement, but Joe spoke on all aspects of bridge repair and rebuilding. He was replete with tips and details that make the job possible, like how to kick off a bass apron bridge, and where to buy quality replacement material.

Chapter Programs

Maine — "Rebushing keys," Russell Peckham
Ottawa — "Upright dampers," Paul Koktan
Toronto — "Diagnosing action problems using gram weights," Thomson Lawrie
New York City — "Tool sharpening," Joseph Kennedy
L.I. Cristofori — "In-home repairs," James Drago
Syracuse — "Grand and vertical damper felt installation," Nancy Buswell
Philadelphia — "Setting up credit card sales," representative of Mellon Bank
Baltimore — "Key recovering and ivory repair," Scott Bannar
Hampton Roads — "Construction of violins," Joseph Moren
Central Florida — "Tax matters for the small businessman," Bob Davis
Southwest Florida — "Preparing the grand for concert," Bobbi Jacobs
N.Central Louisiana — "Use of a hot box as a remedy in drying out piano actions that have been overexposed to moisture," Eddie Melton
Dallas — "Pipe organs," Keith Morgan
East Texas — "Keytops and special jigs," Steve Swinney
Bluegrass — "Hanging hammers and shanks," Nevin Essex
Cleveland — "Hammer filing, bridge drilling and notching," Ken Sloane and Don Dusenbury
Cincinnati — "Temperament relationships; and investigation of equal pythagorean, meantone and just temperaments," David Jackson
Dayton — "Repairing split frames in vertical pianos," Jeff Hollingsworth
Indianapolis — "You *can* take it with you: on-site equipment for piano servicing," Guy McKay
Waukegan — "Available, but not in the catalog," Schaff Piano Co.
Minnesota-North Iowa — "Tuning checks and the tuning exam," Al Fisher
Boulder — "Key weighting and key leverage," Richard Frederick and Hank Lea
South Bay — "Tuning...what works for you," Paul Monroe
San Francisco — "Flotsam and jetsam," Mark Anderson and Margie Williams
Santa Clara — "Repairing cracked plates," William Klein
Portland — "Orthopedic of a piano technician," Denis Wilkinson
"Puget Sound — " A most unusual upright rebuild," Michael Reiter

Recent Film Usage

The following films from the Guild's library were used for chapter programs recently:

"The Balance Sheet Barrier," Western Michigan (Dave Postma); "Casualties of Stress," San Antonio, TX, (Leonard Childs); "Grand Action Regulation," Daytona Beach, FL (Stan Soehlman), and New Orleans, LA, (Dan Skelly); "Invitation to a Grand," San Antonio, TX (Leonard Childs); "The Music of Sound," Western Michigan (Dave Postma), "The Piano Teacher - Technician Forum," San Antonio, TX (Leonard Childs); "Prescription for Complaints," Minnesota-North Iowa (John Stansfield); "Time of Your Life," Seattle, WA (Randy Rush); "Troubleshooting," Sarasota/Ft. Myers, FL (Walter Kerber); "Upright Action Restoration," South Florida, FL (Barry Weiss).