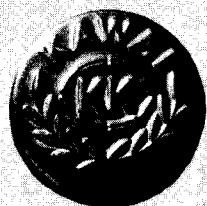


PIANO TECHNICIANS
Journal
February 1994



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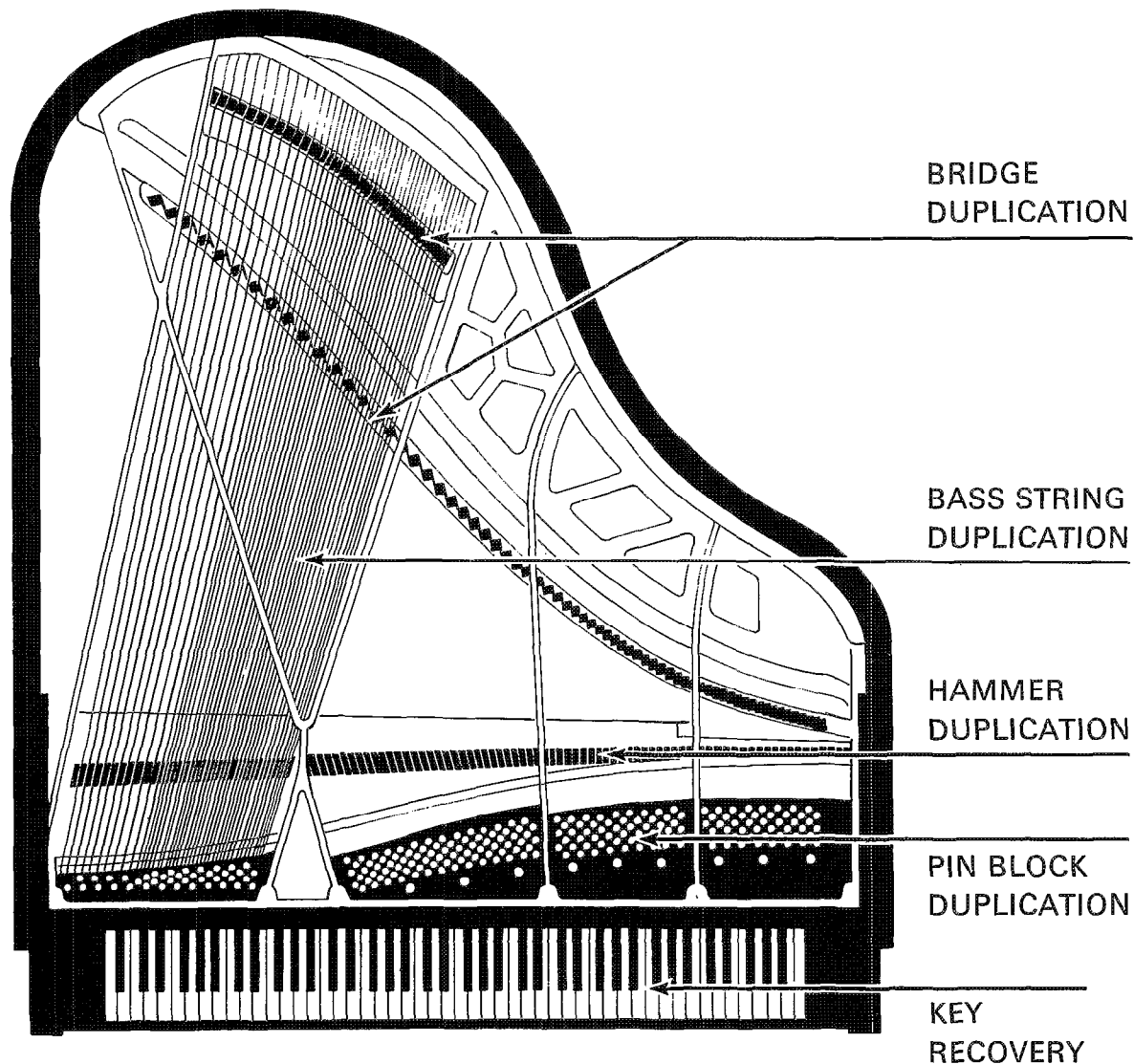
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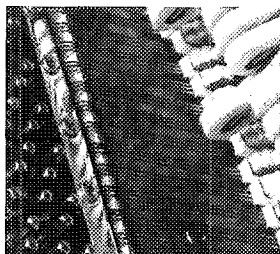
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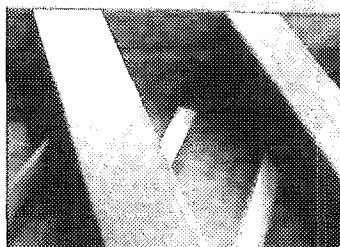
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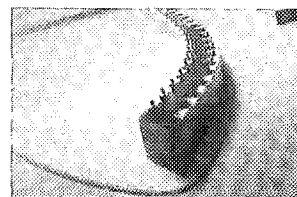


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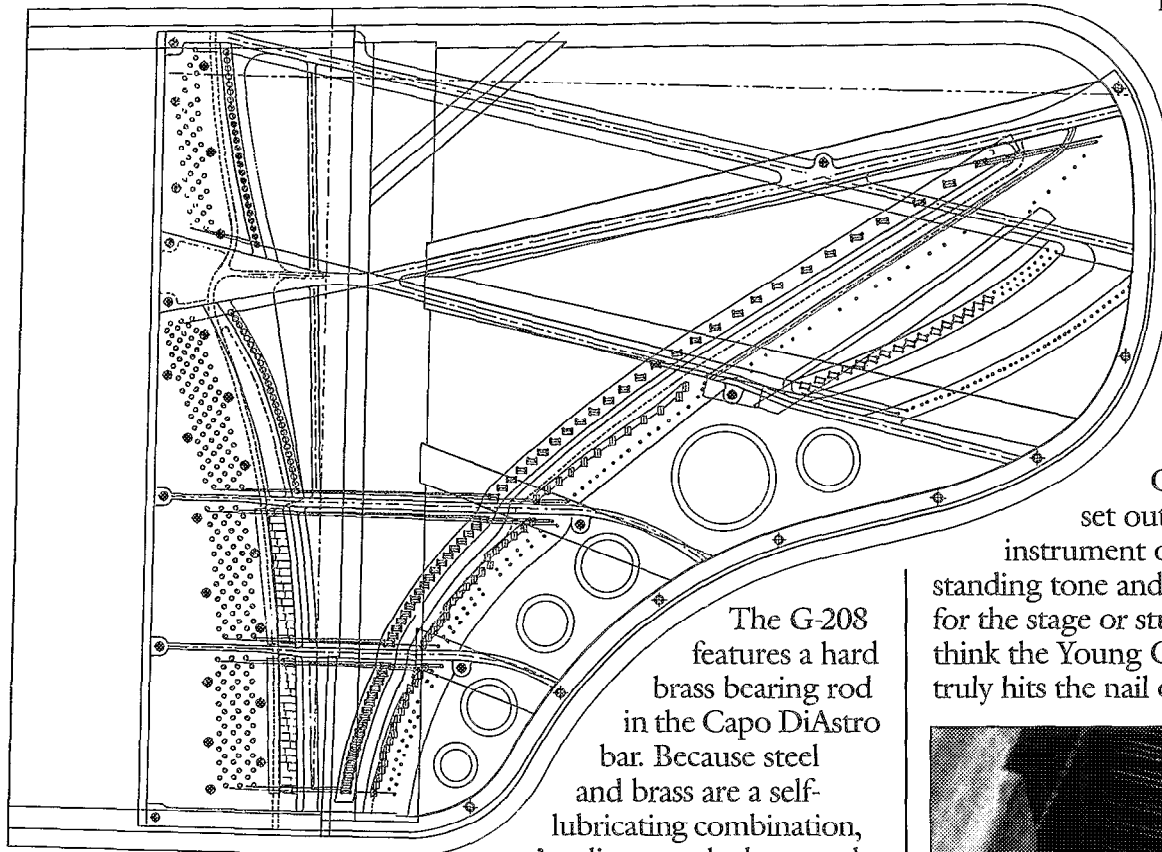
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Our engineers are obsessed with the little things because they recognize the importance of attention to detail. But lately, they've become equally obsessed

with the big things, and the result is 6' 10" long. Our new G-208 grand is a departure for us and represents the smallest and largest of our latest innovations.



The G-208 is a 6' 10" grand piano of an entirely new scale design. It features our new "Asymmetrically Crowned" soundboard which places the highest part of the crown in each rib directly under the bridge providing maximum support under the downbearing pressure of the strings. This new soundboard design exhibits improved power, projection and tuning

stability, and offers a longer soundboard lifetime. We're so pleased with this new design, we're now incorporating it into all our grand pianos.

then terminated in equal length offering improved sustain, projection and clarity.

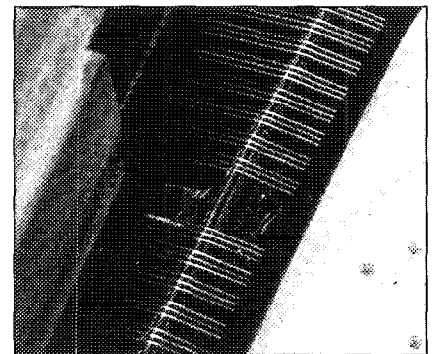
Together these innovations create an instrument with a rich, full sound, greatly improved response and a remarkable evenness of tone throughout the entire range of the keyboard.

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We also took a close look at our action and developed an all-new action design which improves response without loss of projection or clarity.

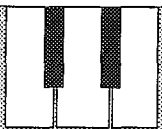
Our new double duplex system terminates the strings at the rear of the bridge and near the tuning pins with duplex bars. Both duplex lengths of the strings for each note are



Because strings bear against a replaceable brass rod, tuning control is improved.

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Update On SPELLS

SPELLS is an advocacy program, sponsored by the Piano Manufacturers Association International, which promotes the benefits of playing the piano to communities throughout the U.S. The acronym SPELLS stands for Study of Piano Enhances Learning and Life's Success. In the words of Brenda Dillon, National Facilitator of SPELLS, "The heart of the SPELLS program is simply getting teachers, retailers and technicians to work together to communicate consistently the benefits of music participation in such a persuasive way that our listeners are compelled to get involved."

Eighteen SPELLS networks are currently operating in the following cities: Albuquerque, Madison, Cedar Rapids, Memphis, Cincinnati, Milwaukee, Cleveland, Nashville, Dallas/Fort Worth, Portland, Detroit, Richmond, Green Bay/Appleton, Salt Lake City, Las Vegas, San Diego, Lubbock, Spokane.

Our PTG Chapters in many of these cities are actively participating; in others, involvement is just beginning. Organizing the initial SPELLS meeting in a community can be a significant event in itself; usually the dealers have never sat down together, much less tried to work with technicians and teachers in a joint venture. The attempt to find common ground has had positive results in breaking down the barriers that competition and differing perspectives have built.

Here are some innovative events and initiatives local SPELLS sites have planned.

- Tchaikovsky's Nutcracker Suite provided the musical inspiration for a highly successful two month event in Portland this

past Christmas season. At nineteen different locations, such as Saks Fifth Avenue and other high-traffic, upscale sites, piano teachers and students performed Nutcracker selections on the piano; the Portland StoryTellers gathered children of all ages together to hear the stories told by the music. Meanwhile, costumed dancers from the Oregon Ballet mingled with the crowd to distribute pamphlets promoting the benefits of piano participation. Both the local music teachers organization and the PTG chapter joined with the local dealers in sponsoring these events; PTG member Paul Francom reports referring two tuning clients to area technicians at the very first event!

Shopping malls seem to be favored sites for finding crowds of people. In Las Vegas last Halloween, a Monster Concert was staged at a local mall. Dozens of children, all dressed to look as gruesome as possible, performed in groups and singly on a large group of pianos assembled for this concert. All the local dealers provided pianos in this first cooperative venture. On another occasion at this mall, local technicians took apart a grand for the onlooking crowd as part of a promotional event.

The Milwaukee network plans to work with local music teachers to expand upon the Monster concert (done without costumes!) staged there annually. The organizers plan to use a bigger hall so that the public can be invited to this event, which formerly could only accommodate parents of the performers. 200 student performers will get the chance to appear playing one of the dozen grands on stage. To follow up on this event later in the spring, concert pianist Laura Spitzer will host an "Evening

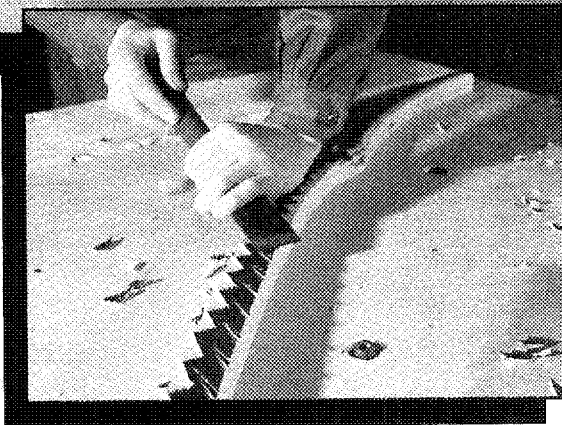
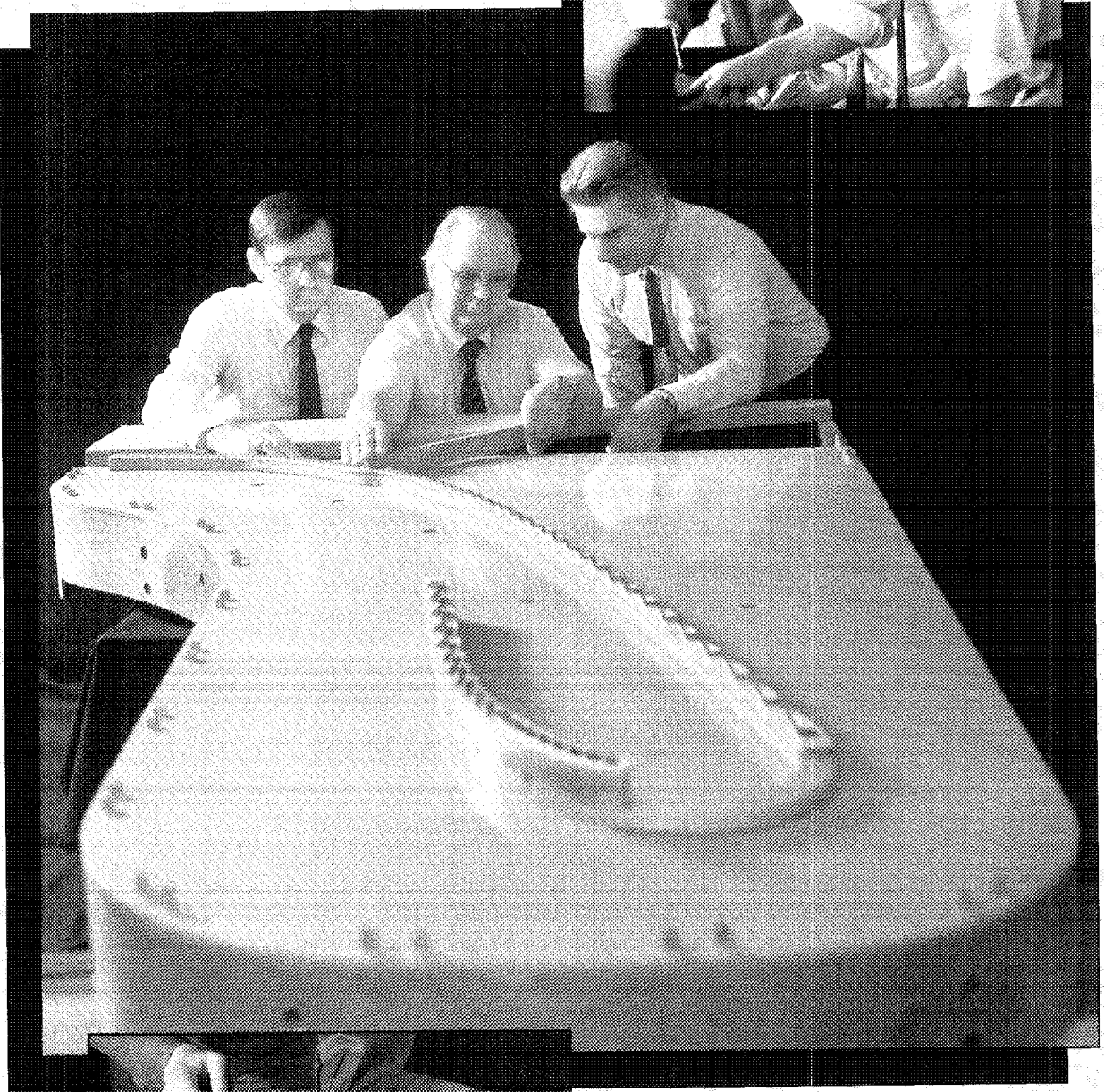
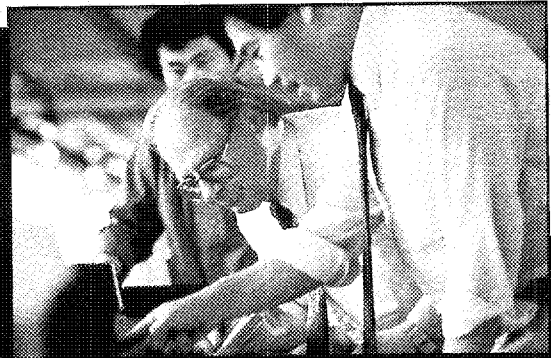
with the National Piano Foundation." Ms. Spitzer (who has been featured in Time Magazine, on NBC's Sunday Today, and in the documentary "Great Teachers") will travel to six area schools giving her excellent assembly programs; these will generate student interest in attending the evening concert, which combines humor and commentary with musical excellence.

In Lubbock, Texas, the faculty members of all the local college music departments have been recruited to participate with the private teachers, the technicians and the dealers. One of their events this last fall was a raffle to win a piano.

The newly emerging SPELLS network in Memphis may have had its genesis at the PTG Mid-South Regional in April, 1993. Monica Hern, RPT, invited the PTG officers (in town for a Management Review meeting) to meet with local piano teachers at her home where SPELLS was a hot topic. Later in the seminar, at a reception sponsored by a local dealer, the possibility of a network was again discussed. From these seeds, an active SPELLS site has grown. The Memphis network now includes the head of the piano instruction program for the public schools as well. They are planning to participate in the Mid-South Fair in 1994 and local technicians

Message Continued On Page 8

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are exploring piano exhibits to be staged at the Children's Museum.

To be effective, these efforts at communicating the benefits and joys of piano participation must be improved upon and repeated regularly. Piano technicians can be effective messengers and leaders in our communities. If you and your chapter have begun this work, let us know so we can feature your efforts. And if you see the need in your home town, take the first step today to reach out to your colleagues in promoting the role of the piano and music in your community life.

For more specific information on how you can start a SPELLS program in your community, please write Brenda Dillon at PMAI Headquarters, 4020 McEwen, Suite 105, Dallas, TX, 75244 or phone her at 214-233-9107.

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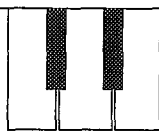


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From The
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Who's 90?

Larry Goldsmith
Executive Director

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

Those words were written 90 years ago by William Braid White in the March 1904 issue of *The Music Trades*. The occasion was the announcement of the formation of "The Helmholtz Society of America," what was apparently the first national organization of piano tuners and technicians in the United States. The clipping was contributed by Charles P. Huether, RPT, former president of PTG, director emeritus of the PTG Foundation, and student of PTG's history.

"This is where it all began," read Charlie's typewritten margin note. "From the Helmholtz Society grew the National Association of Piano Tuners, who, merging with the American Society of Piano Technicians in 1957, became the Piano Technicians Guild."

To continue White's description of the fledgling organization: "The society aims to become, to the tuners, what, for example, the Institute of Civil Engineers is to the men in that profession: a body, membership in which is equivalent to an unimpeachable certificate of competency and excellence.

"To come down to details, we may say that the membership of the society is confined to 'wareroom, outside and independent tuners,' who must, in addition, show proof, by examination, of their ability to attain to the standard of proficiency maintained by the society. It was thought best to make such a limitation for various reasons. The outside or independent tuner is peculiarly liable to be affected by the unhealthy conditions mentioned above and he needs protection and the power of an organization behind him more than does his brother of the

factory. The existing membership of the society is composed entirely of tuners who come up to these requirements and we count among our number representatives from the best

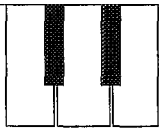
warerooms in New York City, including the justly celebrated house of Steinway & Sons."

In many ways, William Braid White is the common thread that runs through the history of pre-PTG organizations, from the early attempts at unity in the early years of the century to the final founding of a strong, stable and active organization in 1957. He was one of four founders of "The American Guild of Piano Tuners," which became NAPT. He helped to form ASPT and operated his own school of piano technology. He died in 1959, less than two years after the formation of PTG.

The Piano Technicians Guild Foundation, as part of its mission to preserve the history of piano technology, has taken on the task of presenting exhibits on the history of the profession as part of next summer's convention in Kansas City. If you — like Charlie Huether — have information, documents, photographs or other memorabilia that can help us tell this important story, please drop me a note. Or you can contact PTG Foundation President Bruce Dornfeld, RPT, 2134 Walters Ave. Northbrook, IL 60062.

And the man for whom the new society was named? Hermann Ludwig Ferdinand Helmholtz (1821-1894), author of the watershed 1862 book "On The Sensations of Tone," was described thusly: "Figures like Helmholtz belong to a dying age in which a full synthetic view of nature was still possible, in which one man could not only unify the practice and teaching of medicine, physiology, anatomy and physics, but also relate these sciences significantly and lastingly to the fine arts."

In many ways — as we daily combine science, craft and art — that's still what we're about. And we've been at it for a long time.



Structured Learning For All Levels

Steve Brady, RPT
Institute Director

The PTG Convention and Institute in Kansas City this coming July will include many new classes, as well as new concepts and ideas about what a PTG Institute can and should be. Surveys of our members' needs and preferences have shown a marked interest in structured learning and hands-on training opportunities, for both beginning and experienced technicians. The PACE Academy is a response to this interest.

The Academy will be divided into two main areas: classes aimed at helping associates and non-members hone their skills in preparation for the PTG examinations, and classes designed to help experienced technicians develop specialized skills in subjects where hands-on experience can accelerate their learning. The first area is further divided into three sections: the Written Exam Division, the Technical Exam Division and the Tuning Exam Division.

Randy Potter, a well-known educator in our field, is heading the Written Exam Division. Included is a 3-hour class on topics covered in the written exam, as well as an actual opportunity to take this exam during the convention. Randy will be assisted by Tom Cobble, another prominent PTG instructor.

The Technical Exam Division, head by Bill Spurlock, will include a class by Mike Carraher on preparing for the technical exam, as well as hands-on classes covering Grand Action Regulation (Kathy Smith and Dave Vanderlip), Vertical Action Regulation (Douglas Neal), Bushing &

Pinning Skills (Bill Spurlock), String Replacement & Splicing Skills (Bruce Stevens), and Hammer Repair & Replacement Skills (Margie Williams). This section also includes an opportunity for participants to take simulated technical exams which will give them the experience of going through the exam and let them know exactly where they stand.

In the Tuning Exam Division, students will get structured training geared to the requirements of the PTG tuning exam. Each class will focus on the acquisition of specific skills needed to pass the tuning exam. From a general introduction to the exam, taught by Jack Stebbins (current chair of the Examination & Test Standards Committee), to sessions on octave tuning, temperament setting and unisons and stability, taught by Michael Travis, Mark Anderson, Ramon Ramirez and division head Kent Swafford, students will get the information and instruction they need to strengthen their tuning skills in preparation for the exam. Individual tutoring and simulated tuning exams round out the tuning division.

For more experienced technicians, the PACE Academy will include five hands-on classes, each offered at least twice. Of interest to all technicians will be the hands-on tool sharpening class of Kevin and Janet Leary. The best chisels and blades in the world are no better than the worst if they are not kept sharp! Eric Schandall will provide hands-on instruction in the art of voicing in a class sure to fill up early. For all those who have been frustrated by the difficulty of doing

the fussy regulation and "tweaking" of grand dampers, Doug Wood offers a class called "Grand Damper Voicing" complete with models for you to work on. Willis and David Snyder will reprise their hands-on class on hanging grand hammers. I took this class several years ago, and it completely changed the way I did this job. Finally, for the rebuilder who is ready to tackle recapping bridges, Priscilla and Joel Rappaport will be there with their model bridge sections and sharp chisels to guide you through the process.

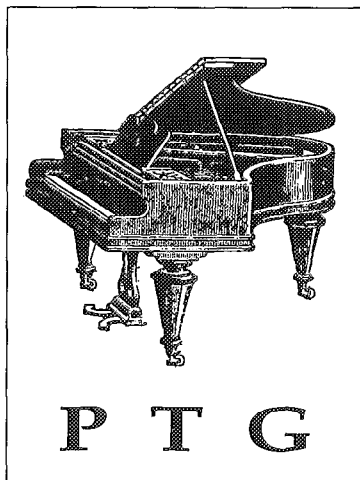
As you can see, we have enlisted many of PTG's very finest instructors to teach in the PACE Academy. Why? Because you deserve the best in structured education in your chosen field. But because we are limited to a relatively small number of technicians in each of these hands-on classes, you will need to be ready to register as early as possible after you receive the convention brochure. As I mentioned last month, the schedule will be included in the brochure. Also included will be a phone number for you to call to register for the hands-on classes. When you call this number, the Home Office staff will be able to tell you which sections have room left. If there is room in the classes you are interested in, you will be offered a place in the classes, and be billed a small surcharge to help defray the added costs of equipment and materials used in these special classes. The staff will also give you a due date for paying your fees. If your registration fee and surcharges are paid by this due date, your place in the selected

hands-on classes will be assured; if not, your place will be released and made available to others. You may find it convenient to pay your registration fees by Visa/Mastercard right while you're on the phone registering.

Next month, we'll look at another kind of new experience planned for Kansas City: the Symposium.

NOTE: This graphic (right) will be used in the coming months to promote the 1994 Convention and Technical Institute. The official slogan of this year's convention, Expanding Horizons, Cultivating Artisans, was chosen for its depiction of growth & education for RPTs and Associates. Look for this symbol. When you see it, know that important Convention and Institute information is at hand.

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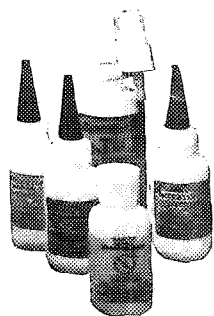
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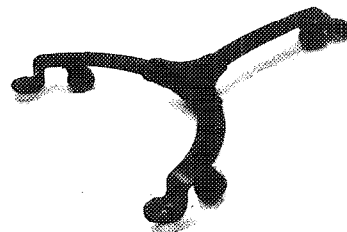
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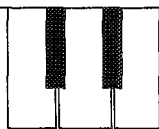
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Discovery is always a wonderful thing, but especially when we discover new answers to old questions. This issue we're going to explore just such new answers. As you continue to read, however, remember that sometimes answers don't resolve things — they only lead to more questions!

Who Put the "H" in the Whippen?

The correct spelling of the name of that unique little lever with all the funny looking doodads on it that makes the modern piano action work is "wippen," not "whippen." I don't know who first added the 'h,' but it seems to have become stuck there for some writers. Even a maker of fine pianos once asked me why I always left out the "h" when I wrote "wippen." I answered him correctly, but I had the feeling that, down deep inside, he doubted my accuracy. I even began to doubt it myself!

I decided to look up the word. I looked for it in my almost-new 1991 Webster's Ninth New Collegiate Dictionary. It wasn't there. No whippen, and no wippen either. Next, I looked in my not-quite-so-new 1989 The New Lexicon Webster's Dictionary Of The English Language that I recently bought on sale at K-Mart for six bucks. (I didn't need another big dictionary, but this was such a good buy that I couldn't pass it up) There was no whippen there either, and certainly no wippen. "Wipe" was as close as it came to it. Next, I checked my old 1959 Webster's New Collegiate Dictionary. (Why do they always put "New" in the title? A dictionary won't stay new forever!) Anyway, neither word was there. "Whipper" was as close as it got to whippen. I thought perhaps that if I went back far enough in time, I might find it, so I looked in the old dictionary I used when I was in high school (Webster's Secondary

School Dictionary, 1913). "Wiper" was as close as it came to the W-word.

I concluded that the word (or words) for which I was looking would never be found in any abridged dictionary, so I went to the biggest unabridged dictionary I ever saw, a 1947 Funk & Wagnalls New Standard Dictionary of the



Jim Harvey, RPT

Editor

English Language that I inherited from my mother. It comprised 2814 large pages with three columns of very fine print per page. There it was! "Wippen ... In a piano movement, the lever to which the back-check, jack, spoons, etc., are attached, and by which the butt and hammer are thrown up to strike the string and lift the damper." That settled it! My memory wasn't playing tricks on me after all! I had it right the first time!

For some strange reason, "whippen" seems to be easier to say than "wippen." Is it because "whippen" is just two common words (whip and pen) stuck together? Does any one know the answer?

This quirk in the human subconscious — this alteration of certain

utterances — reminds me of the old hymn, "How Firm A Foundation." I'm talking about the version that is sung to an early American melody, not the one sung to "Adeste Fideles." The second note of the melody in the fourth measure is an A-flat. The organist will play an A-flat, just as it's written, but the congregation will sing a B-flat, a whole tone above what is written and played. The same thing happens in the 12th measure. They will do it every time, and it's not unique to one church either! It isn't a misprint in one certain hymnal either. I checked several, and it's the same way in all of them. When I was a boy taking piano lessons, I asked my teacher why this was so, but she didn't know. She told me to just play it the way it was written and not to worry about the way the people sang it. I did.

A perusal of the piano literature is interesting. William Braid White called it a "wippen," and so does the more modern writer, Arthur Reblitz. But Ed McMorrow, in his recent book, *The Educated Piano*, calls it a "whippen." Baldwin lists it as a "wippen," and so does Kawai. In the two-page ad near the front of the October 1993 *Journal*, Young Chang calls it a "whippen." Steinway & Sons now avoids this dilemma by calling it a "support" in their latest parts catalog. But it's not just a support! A support just supports something. A wippen supports too, but it does all sorts of other neat things all at the same time.

All the old Tuner's Supply Company/Hale catalogs listed it as "wippen," and so do current catalogs from American, Ford, and Superior Imports. Schaff calls it "whippen." (Schaff also illustrates their hammer-hanging apparatus with a picture that is (and has been for several years), printed backwards, but that's beside the point.) Renner calls it "whippen" in their full page ad on the back cover of *Guide To Resources In Piano Technology*, Piano Technicians Guild 1992 and 1993. I can't find my Yamaha

file, and I think I let someone borrow my Schimmel manual. Anyway, I think that's enough illustrations for now.

I don't know why this unique little lever was named what it was in the first place, but I feel sure there was a reason for doing so. I do know that I'm not going to read through all my old Journals to see what other people called it. Let's just accept the fact that it's a **WIPPEN**, folks, and let's start calling it what it is!

Jim Ellis, RPT

Relax, Jim, I'm on your side! Based on the format of Jim's incoming material, this could have been a short, but nonetheless stand-alone article. I elected to place it in the Forum to expand on the subject.

I, too, do not know where the permutation of the word originates. I do suspect that, like many other words and phrases, it's a matter of whatever a person hears (or learns) first, or *prefers* to hear. Some habits are hard to break; i.e., there are still

hundreds of folks who insist that LaRoy Edwards' name is going to be LEROY. LaRoy has become accustomed to it. I have not.

During my initial learning phase, I spent what seemed an inordinate amount of time studying piano part nomenclature, including the parts catalogs and Braid White's book that Jim mentions. It was during this time that I discovered the two variations of the word, and determined either that *wippen* was the more popular usage, or, that somehow it sounded more sophisticated and that it would become my version of the part name.

As it turned out, the study of nomenclature paid off. *Wippen* appears in the Kawai's nomenclature because I put it there. The word "wippen" will always appear in any *Journal* article over which this editor has an element of control (I see ad slicks, the gray pages and a few other areas at the same time everyone else does). Just to assure this, I have my

spelling checker set up to gag when it sees "whippen." Additional thoughts:

•Jim is correct about the "New" on dictionaries. All of my shelf-saggers are "new," regardless of age. My last new dictionary was a smaller, 1991 edition, which sold for \$12.95. By buying it "new" in 1992, I got it for \$1.99. Perhaps new is a relative term. A good check of an inexpensive dictionary is to see whether the word "exacerbate" is contained therein. If so, try "eleemosynary." If both are not found, don't buy it.

•I hummed both the official and the congregational versions of "How Firm" to myself, and Jim is once again correct. As best I can determine, the melody lines of hymns (and other songs) became abstracts of themselves about the same time that *shaped* musical notation became popular. There were few keyboard musicians in the more rural areas of the country

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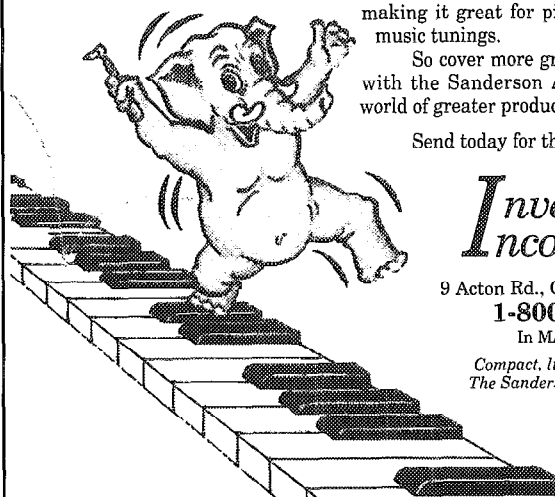
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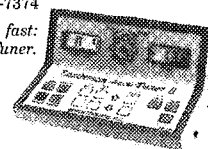
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(some things don't change). As a result, congregations had to sing a *cappella*, usually following a principal singer. There must have been some powerful song leaders during these times, to have left such indelible impressions. (If anyone objects to this explanation, I'll make up another one.)

• I submit that for those who do not already have one, do yourself a favor and buy a copy of *Piano Parts and Their Functions (Illustrated)* from the Home Office. Merle Mason spend a lot of energy (not to mention several years of his life) in compiling this book for our benefit. No one, at least in southern California, was immune from his queries during this assignment. He was also a tireless man who took projects seriously, and the results are evident in the book. Here's an example:

Wippen: A mechanical unit of hinged wooden parts in the action of a piano between the rear end of a key and its corresponding hammer butt or knuckle, designed to transmit controlled energy generated at the front end of a key to its respective hammer through a jack (q.v.) to produce desired sounds in the appropriate strings.

Although Merle acknowledges many colloquialisms in the book, the word *whippen* can not be found.

Having written the responses above, I might add that it would help to read the book after you buy it! I could have saved a lot of time with the following, the Foreword from the same book:

One of the most valuable services an organization such as The Piano Technicians Guild can perform when a need is identified is to fill it. Through a happy set of circumstances, this book represents an excellent example of such a need fulfilled by the cooperation of many people.

As long as there have been pianos it has been difficult for those who build, sell, and service pianos to convey ideas about the qualities and capabilities of a

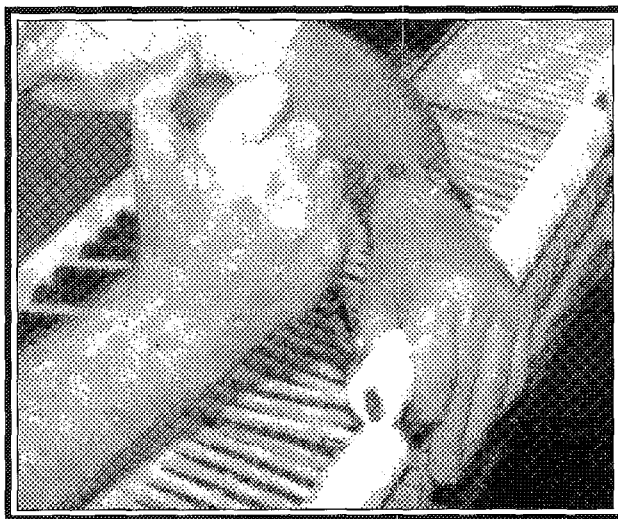
particular instrument with the user, and vice versa. The language of each group involved differs, often because of training or regional background, but even more because of poor understanding of the purposes and effects of different methods or styles of construction.

To the piano player musical potential and the musician's control over the instrument are of prime importance; the language used to describe performance, or lack of it, is essentially subjective.

To the maker and the service person piano language tends to be objective, relating to design, materials, placement, and maintenance. The need has been to bridge the subjective-objective communications gap so that those who use pianos and those who make and service them can understand each other better.

A lesser but very real problem has been the lack of uniformity among manufacturers in names for the same parts of pianos. Because the art of piano making

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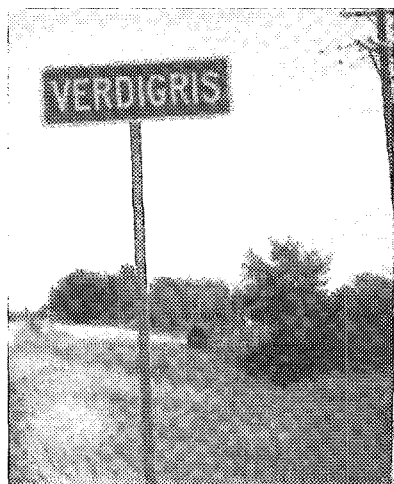
borrowed from several widely differing crafts, and because it developed at about the same time in different countries, names of nearly identical parts differ curiously, adding to the confusion.

Fortunately, a scholarly gentleman, Merle Mason, whose energy belied his officially retired status, agreed to assemble the data necessary to catalogue these differences in language and present them in a manner that could be understood by all. Over several years of dedicated work, with the cooperation of piano manufacturers, parts suppliers, and other PTG members, Mr. Mason has produced an invaluable contribution to all persons who have anything to do with pianos.

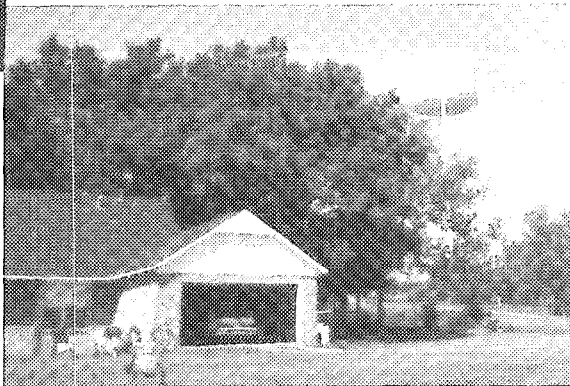
This book may be enlarged and improved in the future if a greater or more extensive need becomes evident. In the meantime, PTG's *Piano Parts and Their Functions (Illustrated)*, compiled by Merle Mason, will deserve an honored place in the reference library of everyone who uses, builds, services, or just admires — this magnificent musical instrument.

**James H. Burton, Executive Director,
Piano Technicians Guild (1965-1977)**

Source of green slime discovered!



Dear J.H., We have discovered the source of the green action center contaminate. It originates in a small town north of Tulsa, OK. We even discovered the secret storage tank. Our spies are uncovering their method of distribution. Will keep you posted.



*For your "howcum" department:
It seems logical that the grooves in hammers striking un-level strings would be correspondingly un-level, resulting in all three strings being struck simultaneously. Hocum even grooved hammers don't mate with the strings properly?*

Joe Lafuze, RPT

Thanks for your report, the pictures, and for your continuing investigation, Joe. We'll be looking forward to a follow-up to this, especially since I saw no factories or tanker transport trucks in the photographs.

Speaking of follow-up, I was going to respond to your "howcum" question. In an unrelated conversation with one of our writers, something was discussed that caused me to read your question, and his answer was entirely different from the one I had considered — the difference was how the question was interpreted. Since it is a particularly interesting question, and one that I don't recall having seen addressed before, I'm going to do two things. First, I'm opening the question to the readers. Anyone who wants a shot at this please write with your response — soon! Next, I'm going to pose the question to several of my choosing. Each person will not know the responses of the others. Based on my earlier incident, I have a feeling the answers will be not only interesting, but quite diverse.

Low-buck glue pot

Dear Jim, I can't keep this to myself. I have found the perfect little glue pot. It is Rival's Little Dipper,

model 3204, which I bought at Wal-Mart for \$6.00. It keeps the glue hot without boiling, and is the perfect size for the baby food jars that I use for my glue.

Jim Geiger, RPT

I see that my supply house now has a satellite operation in Jim's town. I also think Jim's discovery beats any price on glue pots to date, with the possible exception to artifacts found at second-hand stores. However, something is bothering me, and since I can't find the source, I'm going to trust my memory cells (so much for accuracy). I recall from a newsletter or maybe an earlier *Journal* where someone found a similar inexpensive device. This device was too hot, and may have nuked the hot glue as a result. This person (I want to think it was one of the Fandrich boys) then exchanged the device for another of the exact same brand and model, and the temperature was exactly right! The point? With practically any tool or device with a heating element, there are plus and minus variations in the temperature that the device can achieve, and still pass quality control. While they are still satisfactory for the original intent, in this case the electrical counterpart of those that run on alcohol or Sterno, they may not be satisfactory for our special-purposes. If yours doesn't work out as well as Geiger's, keep this point in mind.

A Special Report

Still under the discovery umbrella, I'm going to include one of my irregular (if not irreverent) reports — you know, the kind where I get to combine research, interview, and experimenting skills. Although the subject matter is not directly related to piano work, it does concern us in a peripheral way. Considering our numbers, the results of this information could have a positive influence on our environment. Besides, who isn't concerned with matters of economy and that of finding better mousetraps?

As both a technician and general consumer, have you ever taken inventory of the number of battery operated devices you have? I tried once, and gave up. Having found a source of alkaline batteries at a very competitive price, the idea was to stock up for a year! Just when I thought I had itemized everything, I ran across another device (or three) that had missed being inventoried. It's quite easy to do: if you're like me, your first thoughts turn to flashlights, followed by portable radios and televisions, then cameras and toys (if you have children or refuse to grow up) and so on. These items are not so tough to remember and itemize. But what about the *adult* toys: the micro-cassette recorders that we all carry (or should) on our service calls, or the (non-rechargeable) travel razor for a quick touchup while driving to your last appointment of the day (at least for male technicians)? What about those battery-operated scissors you felt you could not do without in your shop? I could go on, but think you'll concede it gets progressively harder to enumerate how much the lowly battery is involved in our lives.

A few decades ago, our only option was simple carbon/zinc cells, called "dry cells" if I recall. Actually, if you were to dissect one of these cells, you'd see that "dry" is a misnomer. The stuff inside, although black in color and a different consistency, is closer to toothpaste — moist to the touch. I suppose dry was to differentiate from "wet" lead/acid batteries. Incidentally, in case I waffle in my nomenclature, I seem to remember from fifth grade science that one unit of what we're discussing is called a *cell*; a *group* of cells constitutes a battery (unlike AAA's, AA's, C's, and D's, a 9-volt battery really is a battery). Like the confusion over "wippen," time and abuse has made "battery" the common word, regardless of the inaccuracy in terminology.

Later, as technology became available, we could choose from "heavy-duty," alkaline and NiCad (short for nickel/cadmium) cells. In my opinion, NiCad may as well have

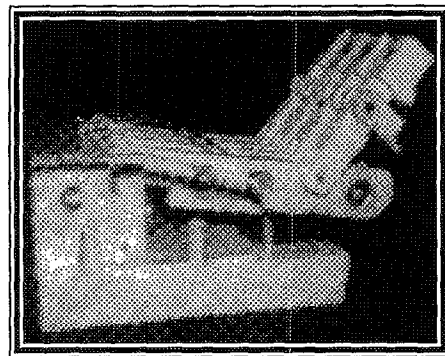
been called NoCan (for no can do); although widely used, they are among the most disappointing of technological advances. Whether used individually, or as a "battery" in cam-corders, portable vacuums or drill motors, or other small appliances, they were and continue to be a nuisance. Of course we have to recharge them, but *prior* to using them the first time. Then there is the short service life per charge. And they don't just die slowly — they quit,

while you're out in the Hinterlands, away from the charger (not that having the charger would do you any good)! They have an annoying characteristic — that of providing optimum power (such as it is — 1.2 volts instead of 1.5), only to have the power degenerate quite rapidly. Not only that, with NiCad batteries, even a fresh charge would be of little use a short time later, whether you've used the device or not since charging.

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Then there are the NiCad memory problems, not just for the battery but for you: wait until the cell is completely discharged before charging; don't undercharge; don't overcharge, and so on. Conversely, with alkaline cells, you can at least tell when they're getting weak. Either type presents an environmental hazard.

A few weeks ago, I happened upon a new product, the Renewal Battery System from Rayovac. Considering my frustrations with NiCad's, and concerned about the environment with my use of alkaline batteries, this product caught my attention. Besides, its new, different, and... I had to try it.

I'm going to point out a few features of this new product. In the following paragraphs, *Renewal* and *Renewal Power Station* are registered trademarks of Rayovac Corporation. Some of the following statements are either modified (I improved them) or plagiarized (with permission) from Rayovac's brochure. Some of the statistics and figures are paraphrased from my telephone interview with John Daggett, corporate communications manager for Rayovac. I will not emphasize certain phrases or words, but will ask you to read all the words carefully; you may have other "between the lines" questions answered.

Regular alkaline batteries are designed for single use only and then must be thrown away. Fresh out of its package, Rayovac Renewal will last nearly as long as a regular alkaline battery. Then, as you charge Renewal, the performance of each additional cycle will decline slightly. Over its life (including a shelf life of 5 years), Renewal will deliver 25 or more satisfactory cycles, due to a patented internal battery design. It comes in the most popular battery sizes: D, C, AA, and AAA. In comparison to the number of regular single use alkaline batteries you would need to buy, one pack of Renewal will more than pay for the cost of the Power Station.

Power Station? You knew there would be a grabber, huh? Here's the scoop on that. In addition to the batteries, Rayovac offers two Renewal Power Stations. These Power Stations

(or chargers), are the most technically advanced in the industry, and feature a computer microchip to deliver maximum performance, cycles and service life. The portable wall unit will charge up to four AA or AAA Renewal batteries. The tabletop unit can charge any combination of up to eight D, C, AA, or AAA Renewal batteries. Charging lights indicate your Renewal batteries are inserted correctly and are taking a charge. They turn off when fully charged. Renewal AA and AAA size batteries will charge in 3-5 hours, C and D size will charge overnight. For safety and to prevent accidental charges, no other type of battery can be charged in Renewal Power Stations. Likewise, Renewal batteries can be charged only in a Renewal Power Station. The Power Stations are U.L. listed.

Regardless of the words about microchip technology, these stations essentially feature a *controlled* parallel charging method instead of the more typical series charger. Translated, this means that you can charge a single cell in the station — you don't need to have pairs. Similarly, it is also the reason that "normal" batteries cannot be used — the charger won't recognize them.

According to Mr. Daggett, the service life per charge varies depending on the device the batteries are used in. He provided the following scenario as an example. *Sega Game Gear* (I don't know — ask a young person), is one of the hottest action games of the season. It requires 6 AA alkalines to run, and apparently has a voracious appetite for them. With single use alkaline batteries, the service life of the cells in this device last approximately 4.5 hours. With Renewal, one can expect 3.8 hours before the charge is depleted. Compare this to 1.8 hours of use with NiCad batteries.

Look at this another way. I'll leave it to you to figure this out based on comparative retail battery prices in your area, but this is a reference. In the example above, the cost of running the action game with single use alkaline works out to \$1.00 per hour. Using the

minimum values for recharging a Renewal, it works out to 55 hours of expected usage. That's 15 cents an hour! Incidentally, the published number of recharge cycles is 25 before a Renewal requires replacement. However, due to the design of the cells, it is perfectly okay to charge them before the charge is depleted. Remember they won't overcharge, and they're charging individually. Some users have reported upwards of a hundred charges on these batteries. John pointed out that while performance is device dependent, one Renewal battery is the equivalent of between 10 to 13 single use cells.

There are two reasons I wanted to bring this to your attention: one is the cost per hour of use; the other was is environmental issue. Let's explore that for a moment, along with providing a little additional education. This time directly quoting the brochure:

"NiCad rechargeable batteries contain cadmium and are the leading source of cadmium entering the waste stream. Many states require NiCad batteries to be collected or mailed back to the manufacturer. Renewal batteries have no cadmium added, are 99.975% mercury free, and will be mercury free next year. They can be safely disposed of in landfills and incinerators. They are the most environmentally responsible batteries available."

Here are a few reminders for us, again built on statements from John Daggett, and applicable to *any* battery:

- Never mix batteries, whether sizes, types, or new and old. You've heard this before, but the reasoning is similar to that of the chain with the weakest link. For instance, a fresh battery working with a weak or dead battery will accelerate the chemical activity in the new battery, and cause a predictable (short) service life;

- Store batteries in a cool place. (I store mine in the freezer, but this is overkill. All that is required is to keep them away from sources of heat —

like the glove compartment or trunk of your car.)

• If you just remember that heat is the single worst enemy of batteries, and take precautions for this, you should be okay.

Thank you for hanging in there during this report. To conclude this section, I'll mention a few personal observations that have nothing to do with the product, per se.

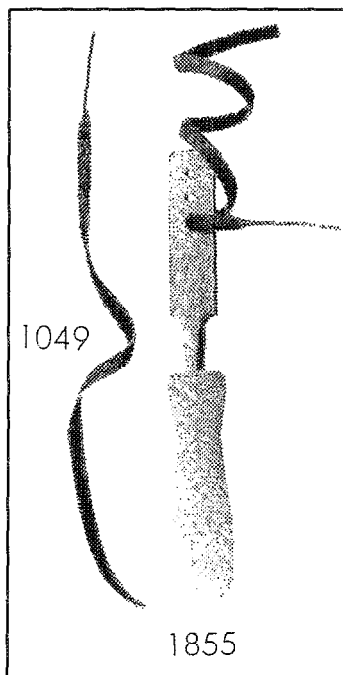
When I called Rayovac, the person answering the phone, while quite helpful, could not respond to all of my questions, especially the one concerning permission to hack away at their brochure. However, I was transferred several times until someone was found. I was impressed. Likewise, if you have additional questions, the folks at Rayovac are ready (and eager) to answer those questions through their Consumer Services line: 800-237-7000. And based on my experience, if the first person on the line doesn't have the answer, they'll find someone who does!

I bought the smaller charger for three reasons. First, I'm cheap, and the wall unit was less expensive. (After I did a some finger figuring on the price of the batteries, i.e., letting the charger pay for itself, I realized this was not necessarily the best choice on my part. Second, I use mostly AA and AAA batteries, which is all this unit accommodates. Finally, if this new innovation doesn't work out any better than my multiple experiences with NiCads, this system gets ditched just like they did! But I have confidence, due to my phone interview with Mr. Daggett and one other reason: while looking at the instruction pamphlet that accompanied the charger, the warranty card fell out. No big deal, except that the return address was actually that of Rayovac Corporation in Madison, Wisconsin — not some mysterious (and typical) warranty card "place" in Boulder, Colorado. This, to me, represents a company that wants to remain self-contained in their efforts!

Next month we'll be following up some issues contained in previous

Forums, as well as featuring some good tips — including a couple of neat fixtures for speeding up your work.

Making any discoveries of your own? Please write and share them with your Journal editor. Or if you have questions, comments or suggestions about articles you read, letters to the editor can be sent in care of: Jim Harvey, 205 Parker Avenue, Greenwood, SC 29649-2629. [11]



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In brief

This lesson will present a method of filing hammers using sandpaper paddles. Participants will learn how to restore proper shape and surface condition to grooved hammers.

Getting started

In order to pursue any serious study of piano technology, one must obtain basic resources. Catalogs from several piano supply houses, both large and small, are essential; besides offering the necessary supplies, their pictures and item descriptions are valuable sources of information. Piano manufacturers' service manuals are also essential sources of valuable information. Most are available at no cost. Most important to participating in this Lesson Plan series are the PTG Exam Source Books, both the tuning and technical versions. Articles in these books will serve as reference material for the lessons.

Hands-on session set-up

To teach this job in a hands-on format, obtain the following parts and materials:

- One vertical or grand action for every two participants. (In simplest form, the lesson can consist of each person filing six straight bored hammers and six angled hammers. If time allows, participants can take turns on the same action in order to complete the job during the lesson.)
- Small C-clamps and wooden sticks to prop up vertical actions as shown in photo 1.

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LESSON PLAN

Technical Lesson #6

Hammer Filing

By Bill Spurlock, RPT
Sacramento Valley Chapter

This monthly lesson plan is designed to provide step-by-step instruction in essential skills. Chapters are encouraged to use this material as the basis for special Associate meetings, or for their regular meeting program, preferably in a hands-on format. This method allows the written information to be transformed into an actual skill for each member participating.

- Approx. 3/4" x 3/4" x 10" wood pieces
- Extra sandpaper paddles

Estimated lesson time

Two hours

Tools & materials participants must bring

Participants must obtain and bring sandpaper paddles and a paper dust mask. Photo 1 shows two styles of paddles:

- home-made paddles, 7/8" and 1 1/4" wide, made by gluing sandpaper to thin (approx. 1/8") wood strips with spray contact cement. These work well because the glued sandpaper gives a very flat surface to the paddle. They can be made up ahead of time in an assortment of sandpaper grits.

- supply house style paddle in which a sandpaper strip wraps around a wood paddle and is clamped by a wooden handle. These have the advantage that sandpaper can be changed on the spot; however, it sometimes curls and fits loosely on the paddle, and several are necessary in order to switch quickly between different grits.

Open-coat garnet or aluminum oxide sandpaper cuts most efficiently. An assortment of grits is necessary to match the size of hammer and degree of wear:

- For fast initial shaping of large, very worn hammers, 60 to 80 grit works well.
- For moderate cutting speed on large to medium hammers, and for low shoulder filing of treble hammers, try 120 grit.

- For slow controllable filing, especially for the crowns of smaller hammers, 220 grit works well and leaves a smooth clean

Assigned prior reading for participants surface.

PTG Technical Exam Source Book (PTG Home Office, 816-753-7747), pages VI.1 through VI.5; 12-93 PT *Journal* article, Good Vibrations—Hammer Work; 12-93 PT *Journal* article, Everyday Voicing—File It Away; 1-94 PT *Journal* article, Everyday Voicing—Against The Grain. Also, practice the techniques in this lesson prior to the meeting session to gain some initial skill; you will then gain more from the hands-on session.

General instructions

There are several reasons that hammers are filed.

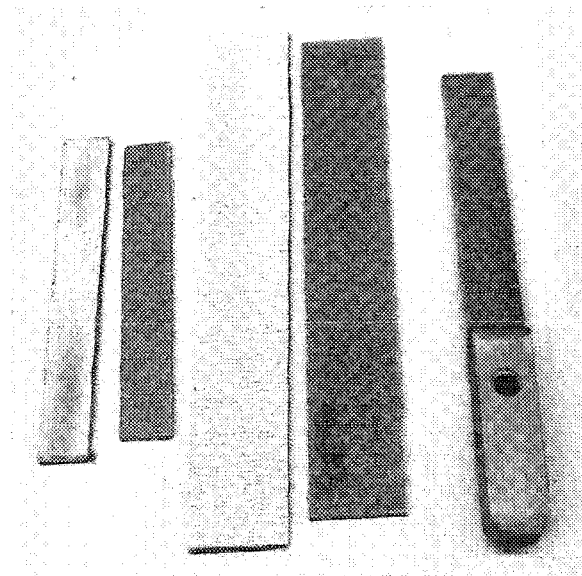
- to improve tone by removing string grooves and restoring a rounded striking point
- to remove string grooves prior to re-spacing hammers to strings, so tone will remain even from note to note
- to brighten the tone of dull hammers by removing softer outer felt
- to remove the cupped shape from new hammers so the crown will strike all unison strings evenly.

Important: Always use new, sharp sandpaper. The work will not only go faster, but you will have better control because less pressure will be required. As you develop your tech-

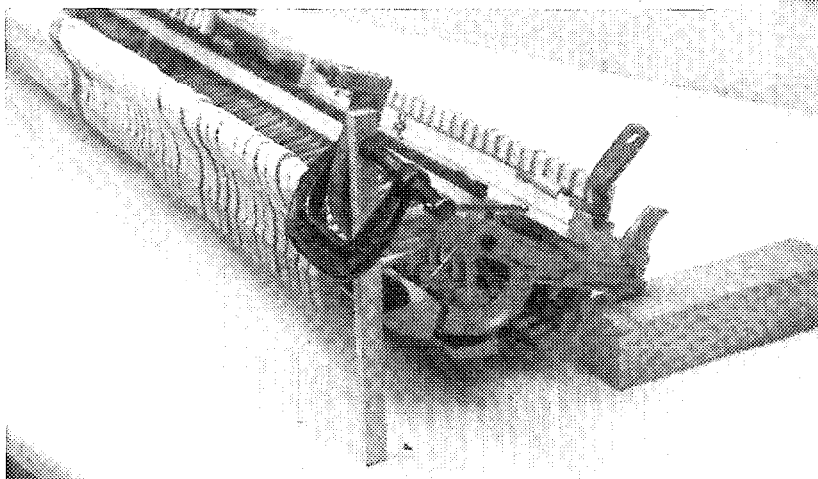
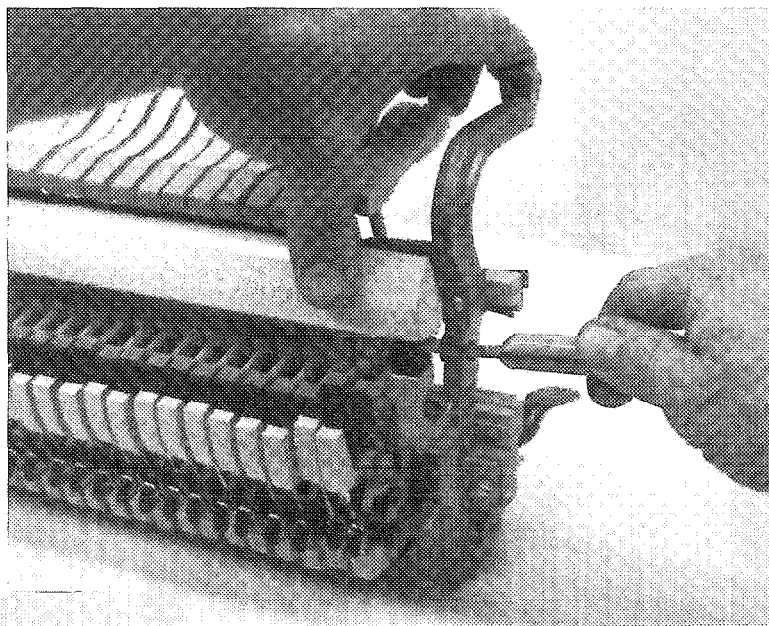
nique, strive for smooth, even strokes. You will get better results using light-to-moderate pressure with quick strokes, rather than heavy pressure with slow, jerky strokes. When filing to remove string grooves, be conservative. Remove only as much felt as necessary to restore proper shape, *without filing below the depth of string cuts in the crown*. It is better to end up with faint string cuts remaining on the crowns and remove these with a light second filing than to rob the hammers of useful life by removing more felt than necessary from the crowns.

Like any skill, hammer filing requires practice to do well. Try various paddles and techniques to develop methods that work best for you. I suggest the following procedures:

Photo 1: Participants should bring all items shown here which includes small C-clamps and wooden sticks to prop up vertical actions.



Photos 2 & 3: Vertical piano hammers are easiest to file when the action is laid down as shown. Removing the hammer rail rest felts gives more clearance from the dampers. A simple stick clamped to the end action brackets supports the action solidly on the workbench. If the wippen contact the bench, place a block under the bottoms of the brackets as shown.



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Photo 4: Straight-bored treble hammers can be filed gang-style. Here a 1 1/4" wide paddle is being used to file upward from the bottom shoulders. This step is done in stages: first, with several strokes coming part way up the shoulder to get a cut started, then with a couple of strokes higher up to peel the felt up to about the 11:00 o'clock position (about the ends of the string grooves). Note the ruler (or use an extra sandpaper paddle) between shanks and rest rail felt; this supports the hammers solidly at one height. Note also the 3/4" x 3/4" wood block which prevents the hammers from lifting up as they are filed.

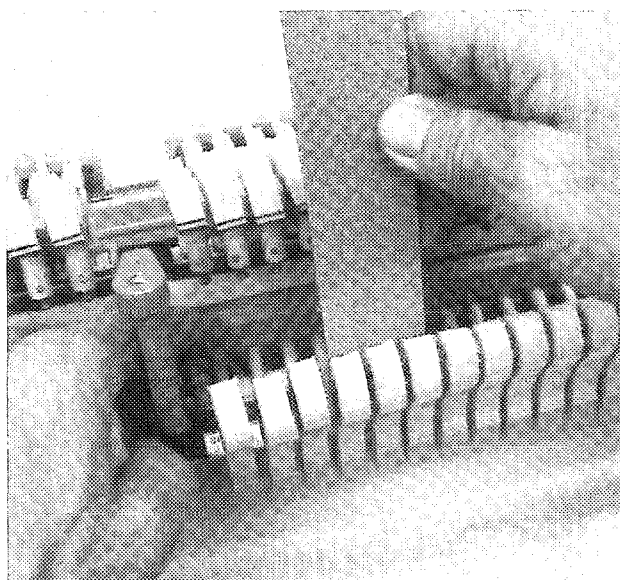
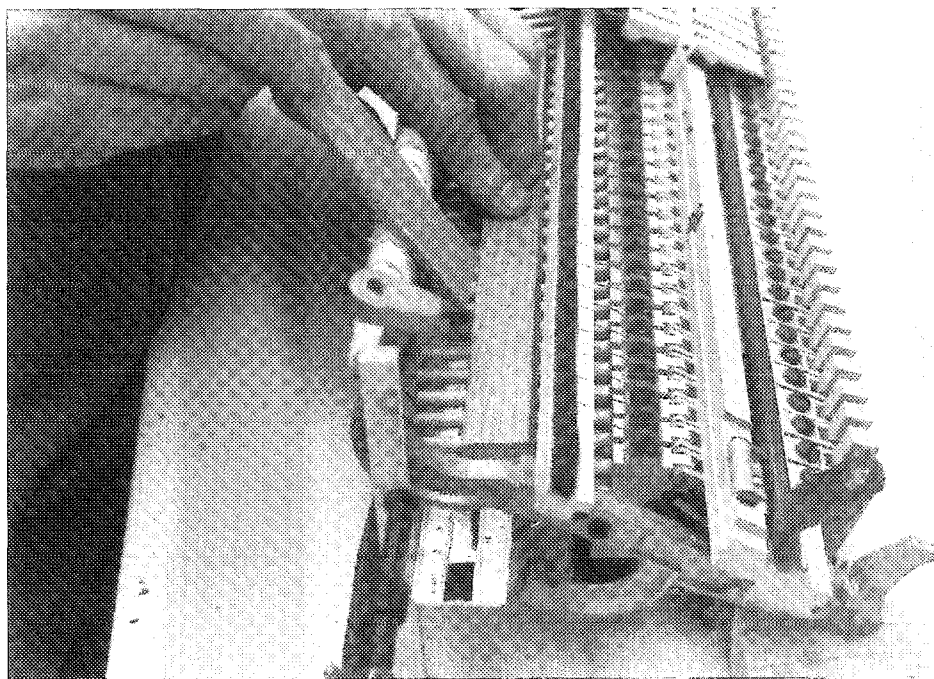
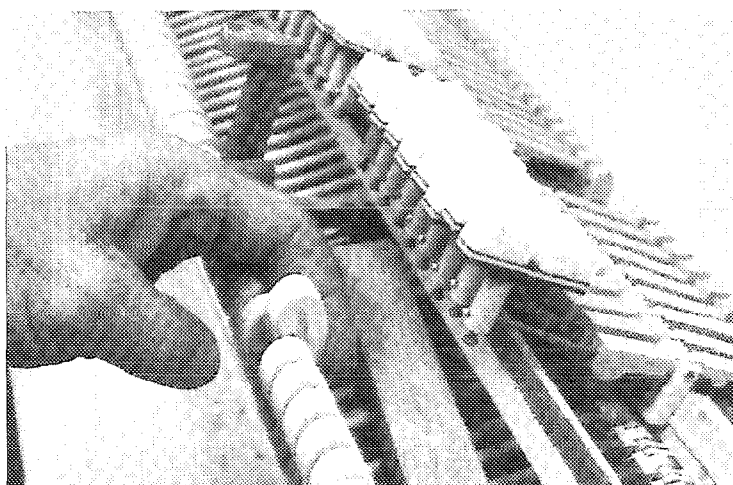
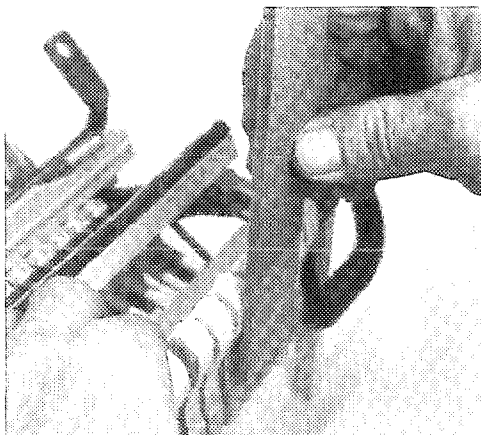


Photo 5: With the wide paddle, straight-bored hammers can be filed three at a time. For an even hammer shape and size across the section, file one group of three hammers partially, then advance one hammer and repeat. By advancing only one hammer at a time, each hammer gets filed lightly three times, and uniformity is maintained. Note that the 3/4" square block can usually be wedged between the spring rail and the shanks so you don't have to hold it down.

Photos 6 & 7: Repeat the previous step for the other sides of the hammers, stopping at about the ends of the string grooves as before. Check frequently to see that you are removing felt evenly from booth shoulders.



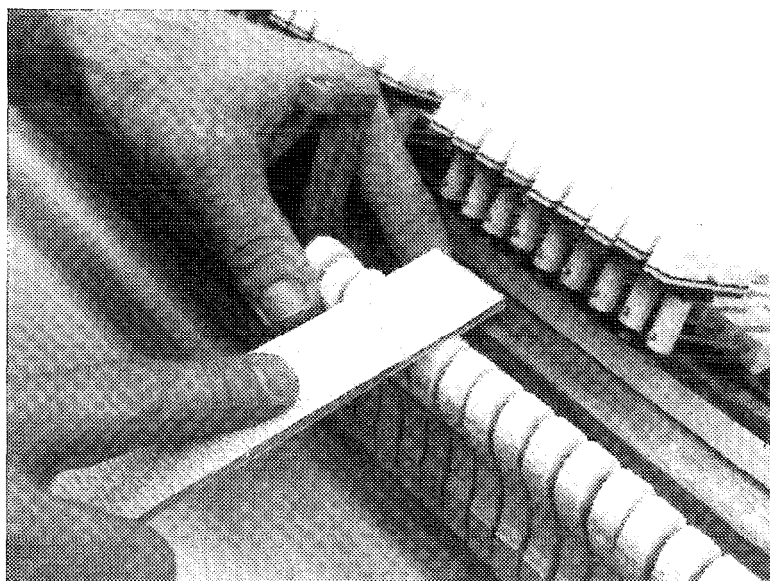
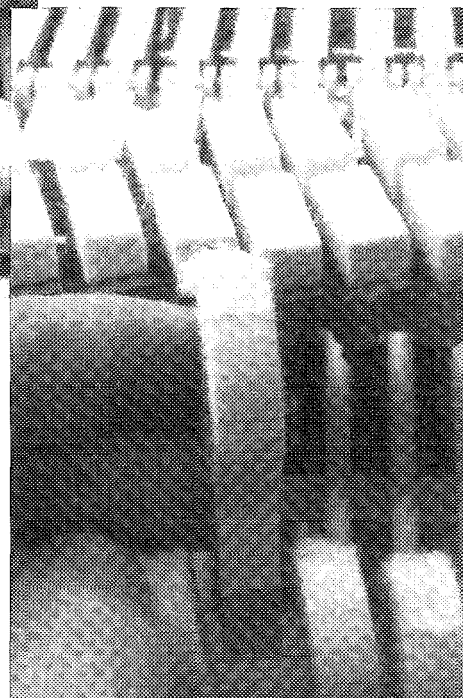
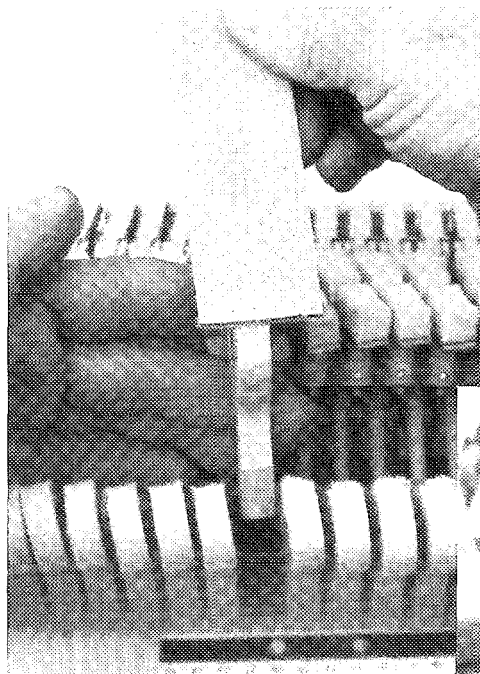
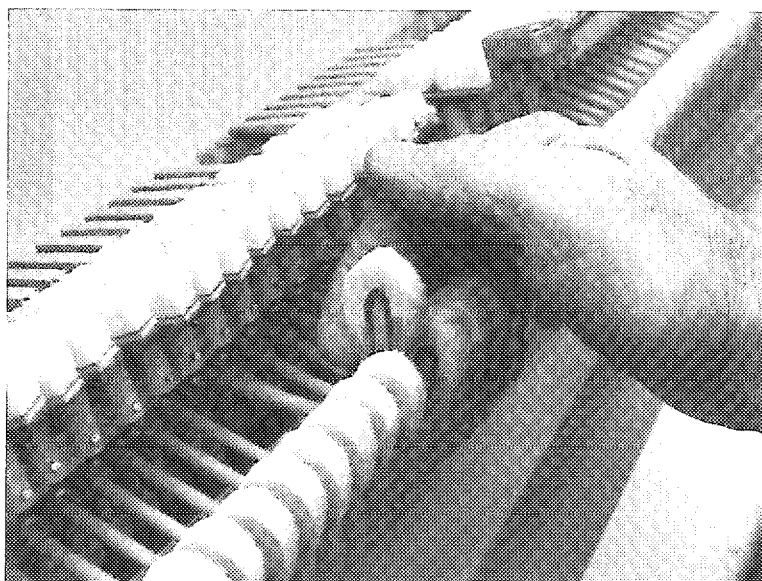
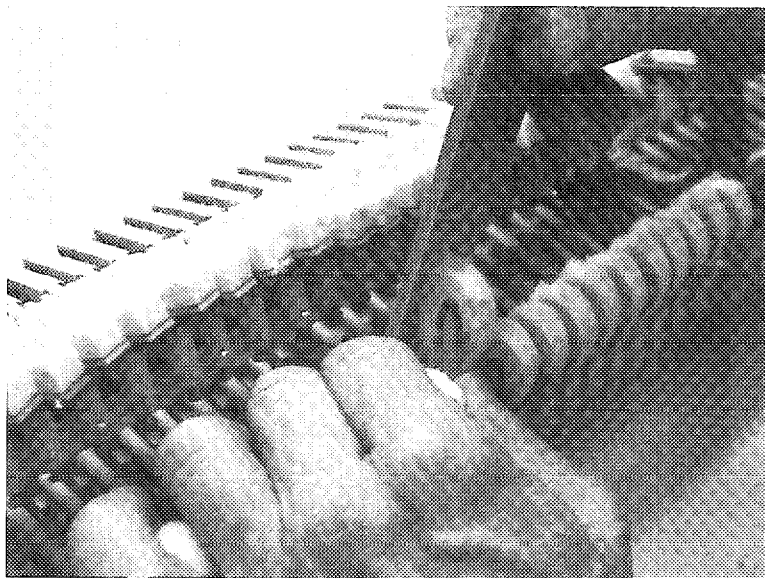


Photo 8: Now you can file over the crowns to actually remove the string cuts. Small treble hammer crowns cut quickly, so it may be better to use a fine paper such as 220 grit here. This will also leave a smoother crown and help brighten treble tone. You will usually get the smoothest crown by filing in one direction all the way across the crown, rather than by coming up from both sides and stopping on top. Experiment to see which direction works best.

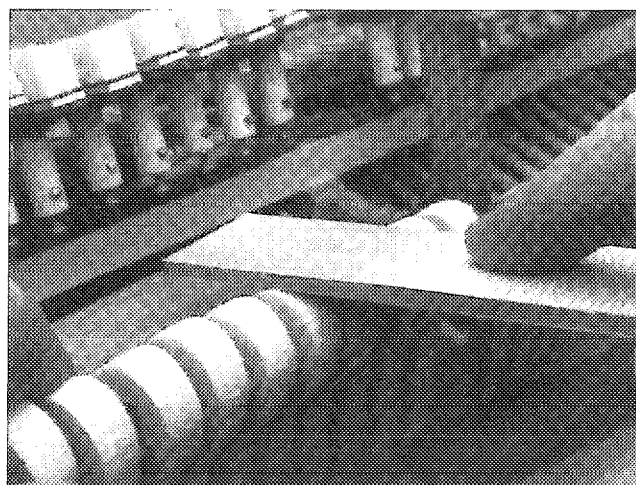
Photos 9 & 10: Shoulders of angled hammers must be filed individually. By first lifting each hammer you can file its top shoulder up to about the ends of the string grooves without damaging the dampers. **Important:** To keep the surface of each hammer square to its sides, watch the leading edge of your cut. It should be straight across the hammer as shown in photo 10. Check often and adjust the tilt of your paddle as you go.

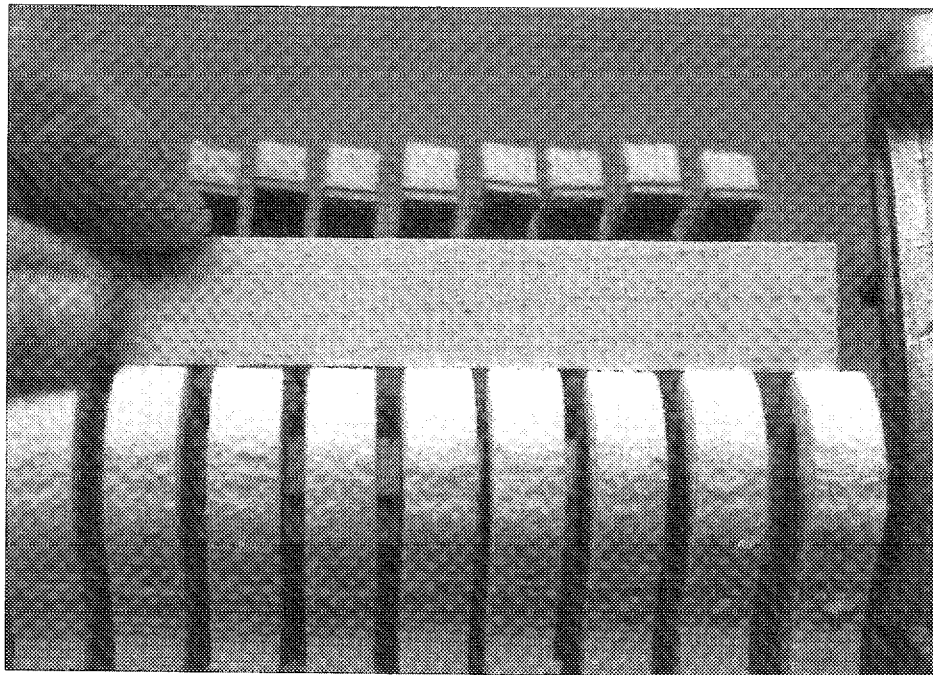


Photos 11 & 12: Repeat the previous step for the bottom shoulders of angled hammers, but raising them only slightly off the rail. Check often to maintain symmetry.



Photos 13 & 14-top page 25: The crowns of angled hammers can be gang filed using a wide paddle, as long as you are only filing the 11:00 to 1:00 o'clock area. Place a ruler or thin wood strip between the shanks and the hammer rail felt to support all hammers in a solid straight line. Check with a straightedge to make sure the crowns are flat and not beveled, so the hammers will strike all three strings evenly.





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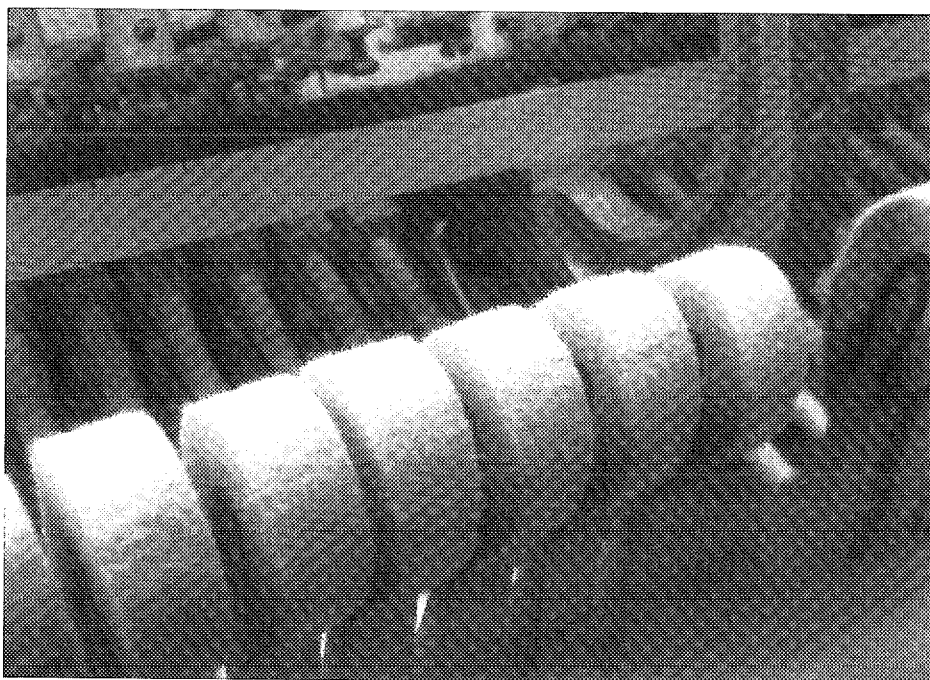


Photo 15: The hammers should be symmetrical, smooth, and free of string grooves when you are done. Not all hammers will file smoothly; experiment with sanding direction and grit to get the best results. If necessary, remaining roughness can be smoothed with a warm iron.

Follow-up

As with any new skill, participants should practice this job on their own until they can perform it easily with consistent results. Only by practicing repeatedly on different types of hammers can the technician develop the skill and technique to do the job efficiently for the client.

In brief

In this lesson, participants will practice setting pitch using the M17 test; each person will tune a unison to their fork or other pitch source, and then use the M17 test interval to check accuracy. They will then analyze a different test interval or pitch-setting procedure under the instructor's guidance, using the Coleman Beat Locator. In addition, they will observe and discuss simple experiments on the effects of changing temperature on tuning forks, strings, and vibrating air columns. The instructor will demonstrate the tolerance for pitch error in the RPT Tuning Exam, and check all pitch sources for accuracy.

Chapter meeting set-up

These lessons are most conveniently taught to a small group of four or five. Each group should have its own piano and RPT instructor. Each piano should be in a quiet environment for close listening. Avoid using pianos that present serious obstacles to tuning, such as deeply grooved or misaligned hammers, string termination noises, etc.

Tools & materials participants must bring

Tuning hammer and mutes, A-440 fork or other pitch source, Coleman Beat Locator. The instructor should bring a cold bottle of beer (or bottle of soda, or water, etc. — the taller 12-16 oz. returnable bottles work best) in a small cooler with ice and a thermometer,

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LESSON PLAN

Tuning Lesson #6

Setting Pitch

By Michael Travis, RPT
Washington, D.C. Chapter

This monthly lesson plan series is designed to provide supervised practice of tuning skills as a supplement to independent study and practice. Chapters are encouraged to use this material as the basis for special associate meetings, or for their regular meeting program. Each lesson is designed to take about one hour, with about four participants. Participants are assumed to have essential reference materials and tuning tools (see PACE checklist) and access to a well-scaled large upright or grand piano for independent practice.

along with several extra tuning forks. In addition, a Sanderson Accu-Tuner (SAT) or other measuring instrument will be necessary.

Home study assignment for participants

Read the article "Pitch", by Michael Travis in *The PTG Tuning Examination: A Source Book*, p.13 (PT Journal 1/90). See also "Optimum Size of A5-A4 Octave," by Rick Baldassin, esp. p. 111 through the third paragraph on p. 112, (PT Journal: 3/88). (The title of this article is a misprint, as noted by the *Source Book* editor, as are the first five words on page 112; a new paragraph should begin there with the sentence "Assuming that we now have an accurate pitch

source, our next task is to accurately transfer the pitch to A4.")

Practice setting pitch by the following procedure. If possible, check your results with a SAT by measuring cents deviation at the A4 fundamental. You should be able to consistently set pitch to within $\pm 0.5\%$ of A-440.

How to set pitch of A4 to A-440

Tuning fork tips: listen to the fork in air next to your ear during this procedure (without letting it touch the bridge, keybed, teeth, etc.). Avoid holding onto the fork longer than absolutely necessary. Wear a glove or insulate the fork handle to minimize the possibility of the fork warming and going flat.

Use the fork at the approximate temperature at which it has been calibrated, and recheck the calibration periodically. Do not attempt to use an aluminum fork for your most accurate work.

Before starting, mute F2 to a single string and make sure that the M17 with the fork, F2-A-440, is beating on the wide side of pure, and at a comfortable rate, such as 4-6 bps.

1. Mute A4 to a single string.

2. Tune a unison, A4-fork or other A-440 pitch source.

3. Unison tune the other two strings of A4 to the first.

4. Recheck unison with the fork. If necessary, repeat steps 1-3.

5. Check unison tuning with M17: compare beat rates F2-A4 versus F2-A-440.

6. Retune A4 if necessary as indicated by the M17 beat rate comparison. For example, if the M17 F2-A4 is beating faster than the M17 F2-A-440, then A4 is sharp and should be lowered slightly; go back to step 1.

General instructions

The session should start with an experiment. If there is more than one group of participants, all may observe the initial part of the experiment, then go on to their group's piano, and reassemble later at the end of the lesson to see the results. The instructor should first pull out a cold beer (or soda), and take a few good swigs (down to about half full) just to get

everyone's attention. Let them know that this is one of the benefits of being an RPT. Have someone take note of the temperature in the cooler, and replace the lid. Blow across the top of the bottle to set the air column in motion, and try to "set the pitch" somewhere in the midrange of the piano (not critical). Identify the note on the piano closest to the most prominent pitch of the air column, and measure the cents deviation from that pitch. Get a volunteer to record "initial bottle temp. and pitch." Now set the bottle aside in a safe place (but not back in the cooler!), and *do not drink any more from this bottle until later, after the experiment is complete.*

Next, remove one of the tuning forks from the cooler, and as quickly as possible measure its cents deviation at the fundamental, noting again the temperature inside the cooler. Have your volunteer record "initial tuning fork temp. and pitch," and set this tuning fork along with the thermometer near the bottle, and forget about all three of them until the end of the lesson.

Now, with the usual small group of four or five participants per piano, the instructor should start by explaining what will be done in the practice portion of the lesson, going over the "How to..." procedure outlined above, and then demonstrating the RPT Tuning Exam tolerance for pitch error of $\pm 3.0\%$ (to pass at 80% in the pitch section). The instructor will initially detune all three strings of A4 slightly, so that none are at A-440 or in tune with each other. Each participant will then attempt to set the pitch of the A4 unison to A-440, using his/her own tools and the specified procedure, with instructor prompting

as needed. Following satisfactory completion of this, the instructor will ask the participant to use the Coleman Beat Locator to analyze how a different interval might be used as a beat rate check for setting pitch (see below). The instructor should be able to answer questions about any procedure without hesitation (may require some study). Participants using a non-electronic tuning fork should leave it somewhere on the plate of the piano so it will stabilize for subsequent pitch checking. If desired, the instructor may measure the cents deviation at A-440 of each participant's A4 unison. When all participants have had an opportunity to perform, use the SAT or other device to check the accuracy of each one's pitch source.

Returning to the bottle, fork and thermometer set aside earlier, in the larger group setting, have a few volunteers remeasure the pitch of the bottle and of the fork, and compare these "warm" readings with the "cold" readings taken earlier. Discuss what happened and why.

You can re-emphasize the effect of temperature on pitch by another demonstration. Find or create a solidly tuned midrange unison. After all agree on one, have a volunteer touch a finger to *one* of the unison strings and measure how many seconds pass before the unison is no longer in tune. Have the volunteer check the unison about every 10-15 seconds on your cue by briefly lifting the finger off the string and playing the note to see if the unison is still in tune. Discuss what happened, and how it may impact our daily work.

The Coleman Beat Locator may be used to analyze various interval checks. Place the first partial

stripe of the yellow slide above a test note under analysis, and see if there is a higher partial of the test note at A4. If so, then that test note can safely be used to check a pitch setting, assuming the interval beat rate is fast enough to be useful. If the test note does not have a higher partial at A4, place the "1" of the pink slide above A4 while not changing the original position of the yellow slide, and see where the coincident partials are located. During this part of the lesson, have the participant discuss why one would or would not want to use a particular test interval for setting pitch. The following intervals are possible candidates for analysis: M3, M6, M10, P12, D8ve, M17, P19, m21, T8ve, m28. Not all are valid test notes for pitch setting.

For example, analyzing the standard M17 test, place the first partial stripe of the yellow slide above F2, and note that F2 has its fifth partial at A4. Hence, the M17 is a valid interval check for setting the fundamental of A4 to the fundamental of the fork, provided only that it is beating at a comfortable rate on the wide side of pure.

Any note sounded with the tuning fork held in air next to your ear that produces a beat is a possibly valid test note for pitch setting, since a tuning fork produces essentially pure fundamental tone in air. If you have to "ground" the tuning fork on a hard surface to get a beat with a note, be careful!

Note: Do you find these lesson plans valuable? Do you have specific suggestions for changes or clarification? Please direct any comments or suggestions to Journal editor Jim Harvey, who will forward them to the author.

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Needling: Probing & A Few Standard Techniques

A Photo Survey Continues

Nick Gravagne, RPT
Contributing Editor
New Mexico Chapter

Continuing along in our photo survey of voicing techniques, this month's offering includes certain needling techniques. As you may recall, the larger point of this series was stated as the "how and why" of "bringing up" a piano in the customer's home. Since tone work is usually a major consideration in the overall project, it has likewise become a major topic of these articles.

In the experience of many technicians, most piano owners are complaining that the tone has become harsh and loud ("hurts my ears!") where it used to be strong, but listenable and pleasant. Filing the grooves out, resurfacing or reshaping hammers may focus the tone by allowing for a more specific strike point on the string, but these "dressing" techniques alone do not usually mellow out the tone. The compacted and dense hammer felt usually requires needling in order to create a less dense, more springy condition. This springy hammer then, as opposed to a dense and less springy one, encourages a stronger fundamental tone while at the same time eliminates the unwanted and confusing array of high upper partials. Moreover, since firm

unison tuning is much exasperated when trying to "phase in" extra-energetic high partials — those partials which, if present at all, are supposed to subtly color the tone instead of over-shadow and direct it — a piano eliciting strong fundamentals is easier to tune.

So let's assume the hammers have been reshaped or resurfaced. The action has been shoved back into the piano and the tone found to be loud and harsh. Much of what follows has been presented in past articles, only here these several photos support those texts.

Photo 1: A #5 or #6 sharp single needle, 3/8" to 1/2" is being used as a *probe*. How dense is the felt? If the felt is springy and not too dense, the needle can easily be inserted all the way. If very dense, the needle will *not* be able to be inserted all the way when applying a moderate and steady pressure. On hard hammers the needle will begin to bend and even break — a clear sign of excessive denseness and a cause for poor tone. If the needle easily penetrates, say, the mid to lower shoulders (as in the photo) then any cause for harshness will be found at the strike area of the hammer. The concept here is one of exploratory work. This probing for denseness and overall condition will not affect or hurt the hammer; but indiscriminate needling (heavy voicing) of already springy felt will. Note that on old, original Steinway hammers that haven't been too "doctored," it is usually possible to insert the probe needle completely with little effort.

Photo 2: Probing higher on the hammer shoulder. Notice that three

hammers are being squeezed together. This is a common practice when needling and serves both to speed up the voicing process and better support the hammers from side to side tipping.

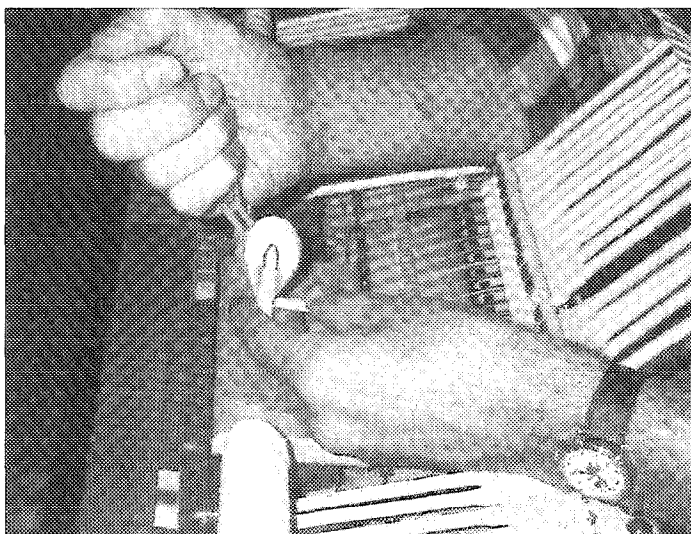


Photo 1

Also note that in photos 1 and 2 the hammer tails are supported on a hardwood block.

Photo 3: The results of the probing indicate that the low to mid shoulders (photo 1) are a bit dense but not horribly so; however, the upper shoulders closer to the strike point (photo 2) are very dense or "tight." The actual strike point is also hard and dense and will require relaxing. Thus, an additional voicing tool carrying three needles extending 5/16" to 3/8" from the head is being used to loosen the felt deep down into the high shoulders. The technique here is one of slow and steady pushing rather than one of stabbing and jabbing. Needle insertion techniques are a matter of training, habit, and taste. Do what works for you. Most of us combine techniques as each situation dictates.

When using the stabbing technique for loosening up shoulders, do as George Defebaugh suggested — place your thumb over the strike point! With your thumb as a shield, he said, you can't accidentally stab the hammer crown. Thus it is not surprising that George was also inclined to remind us that, depending on one's

aim, a conscientious voicing job might be gauged by the presence of red specks found here and there on hammers and shanks.

When working with original Steinway hammers, particularly old originals, remember: *a little bit goes a long way*. If the probe tests indicate loose enough shoulders, both high and low shoulders, *leave them alone*. It is very easy to kill any hammer by over-needling the shoulders, but Steinway hammers are especially vulnerable. If the tone is too bright, loud, etc., but the hammers do not have very tight shoulders, suspect the very top of the hammer for packing and denseness. If you find the hammers basically sound but smaller than new (less felt directly over the molding point) due to filing over the years, you have found the cause of the bright and harsh tone. The very top surfaces of the hammers need softening. Sugar-coating sometimes works, but sometimes not. We'll deal more with this next month.

Photo 4: Once the high shoulders have been loosened (in this case three or four deep stitches on each side of the crown) the tone is tried again. Still obnoxious — pingy and too bright. Since the lower portions of the hammer are relatively relaxed — one can even squeeze the shoulders between thumb and forefinger and feel a springiness — the tonal problem is now mostly confined to the hammer crown itself. Remember, the top surface of the hammer should be springy, and just under this elastic top should be denser felt. In the photo a sugar-coating tool carrying three short needles is being used to relax the top surface of the hammer. Using stabbing

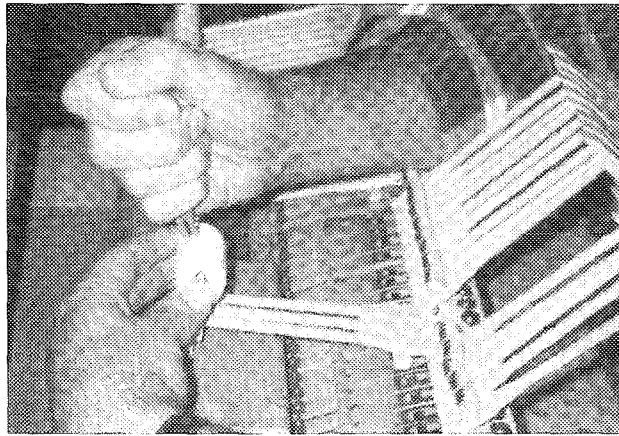


Photo 2

or pushing strokes, the tool is "bounced" off the hard hammer top several times while scattering the strokes rather than confining them to one exact area. Sugar-coating has the effect of softening the tone without killing it.

*Photo Survey Continues
Next Page*



Photo 3

*...Remember, the
top surface of the
hammer should be
springy, and just
under this elastic top
should be denser felt.*

Photo 4

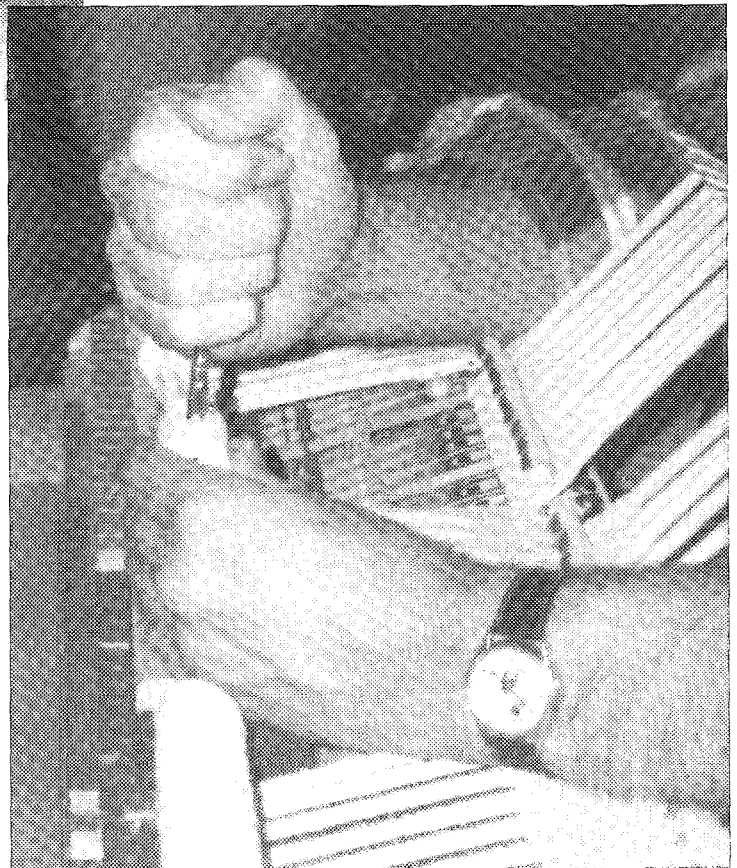


Photo 5: The sugar-coating tool. The needles in this voicing tool extend about 0.100" (between 1/16" and 1/8"). I prefer a sugar-coating tool dedicated to this one task; the short needles prevent the technician from inadvertently stitching too deeply into the crown. When the tone was tried at this point it was much better but still a bit too punchy. Two more deep stitches were taken on either side of the crown followed by a bit more sugar-coating. The tone leveled out as strong, yet mellow.

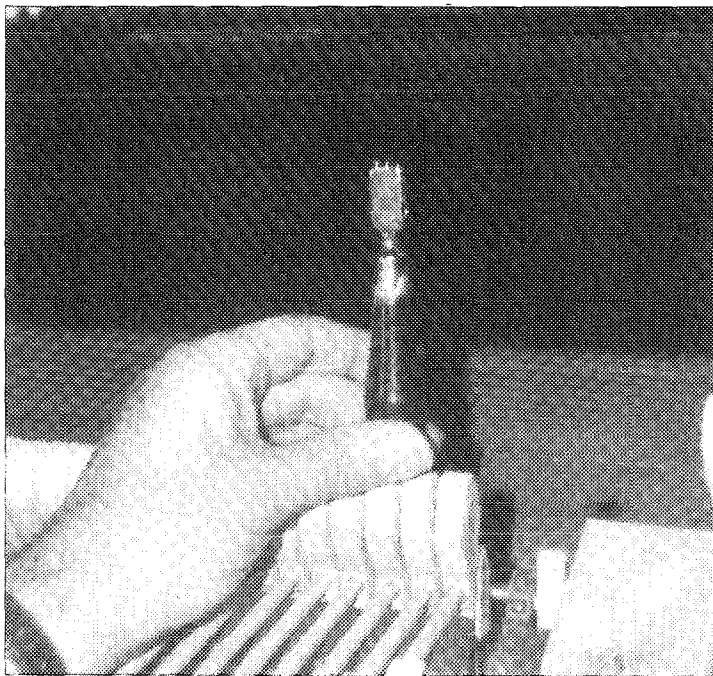


Photo 5

Photo 6: "Resetting the hammers" by lightly but firmly beating them down is a technique forwarded by Wally Brooks. The idea here is that, since the hammers are going to normally pack under use, why not accelerate the process now? The needled hammer is like a porous sandy foundation requiring tamping and packing in advance of actually setting a structure on it. Wally and others suggest using a small nylon hammer (or the back handle of the voicing tool) for resetting. I use a large dowel with a hard felt block glued to its bottom, not only to reset the hammers, but afterwards to firmly rub their surfaces with the felt block. This rubbing abrades and finally dresses the surfaces like no sandpaper could ever do. Moreover, because of the great pressure which can be applied via the handle, the felt can be "pushed around" the hammer molding thereby invigorating the entire top of the hammer felt mass. The effect might be understood as massaging and loosening the tight muscles of the hammer felt.

Note that the resetting tool has additional functions. As a keystriker for tuning (photo 7): strike the key no harder than you would with your fingers/hand in order to deliver very firm tuning and test blows. My left hand and fingers have thanked me many times over. The tool serves also to check for keyframes knocking on keybeds.

It sometimes happens that hammers are simply too hard and dense for effective use of standard needling techniques. Conversely, it also happens that hammers can be too soft to encourage good tone. What we

do in such cases will be the topic of next month's article. After that we'll summarize and recap our series' information thus far, then continue to develop general procedures for complete in-home piano prepping and maintenance.

[Ed. note: For in-home service, you may want to use something other than a mop handle for your "resetting tool"; otherwise, cut the threads off the end first!]

Photo 6

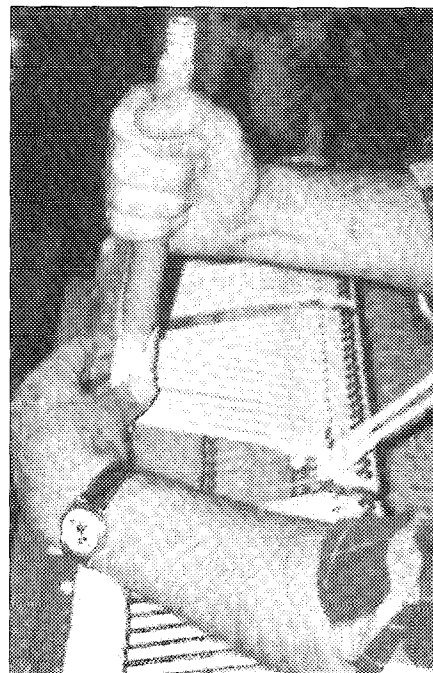


Photo 7



Regulating The Wippen

Eighth in a Series of Articles on *Grand Action Regulation*

At last, after seven wordy articles, we have arrived at the part of the regulating process where we actually can turn some regulating screws! When I was first learning to service pianos, I thought that adding punchings under the keys and turning screws in the action was regulating! As you have seen in the past few months, my vision of proper action regulation has been more than adequately broadened. I still find these steps to be the most gratifying, though, as they go quickly, and the benefits are large and can be enjoyed immediately.

It is a good idea to look at the alignment of the knuckles before regulating the jacks, as this might affect your sequence of the regulation. Viewing the action from the side, look under the shanks and sight down along the row of knuckles, looking to see if they are in a straight line. Our ideal piano may have perfectly aligned knuckles, but most real actions are slightly misaligned, and this isn't necessarily the end of the world. It is best, though, to correct the problem, and cleaning up the alignment or replacing the knuckles isn't such a terrible job that we should avoid it. If the knuckles are badly misaligned then you can at least reglue the worst offenders; then you should adjust your regulation procedures to make the piano work the best that is possible.

Step 8: Regulate the jack under the knuckle

I prefer to regulate the jacks under the knuckles before the repetition lever regulation. This is because I do the final regulation of the repetition lever height by feeling the jack rub on the knuckle skin. (I know that is a little cryptic, but it will be covered in more detail below). The location of the jack under the knuckle will change the feel of the repetition lever height regulation, so it must be done first.

To regulate the jacks, place the action on the workbench turned around so that the hammers are towards you. Raise all of the hammers in the first section, then lower an end

hammer down into the rest position. Press down on the repetition lever on that note and the one next to it (to allow a clear view), and look at the jack's alignment in relation to the wooden core of the knuckle. The rear edge of the jack (the edge away from the keys) should be aligned with the rear edge of the knuckle core. I prefer to be looking at the knuckle from about a 45° angle — in other words, about half way between straight down and direct from the side. To help get a better view from this angle, I usually pull the wippen sideways slightly so that the jack is right at the edge of the knuckle. Trust me — this little flexing of the wippen does no harm, and is very helpful in making sure the jack is right where you want it to be.

Once you have a good view of the parts, decide which way the jack needs to move, raise the hammer shank out of the way, put your regulating tool between the letoff buttons, and turn the screw. You should not turn the screw while the jack is fully at the rest position because this will twist the regulating button felt, and will result in an unstable regulation. Instead, engage the regulating tool on the screw and pull the jack away from the rest position while you turn the screw. A slight downward pressure on the tool helps to keep it engaged on the screw blade. After each turn of the screw, allow the jack to snap back into position when you pull the tool off. This insures that the regulating punching is packed into position for a stable regulation.

Alternate between viewing the alignment and adjusting the screw

until you are satisfied that the jack is where it should be. Now do the same procedure on the note at the other end of the section, then on a note or two in between. Check the alignment of these samples with a straightedge, and if they are not aligned you need to look more carefully at the knuckle alignment, or change your viewing angle to insure that you are regulating them well. Go slowly at first to train your eye and hand, then go faster as you get more confident in this method.

Now that some samples are set, adjust the rest of the jacks in the section visually in a straight line. After you have made one quick pass, check each note individually by lowering each shank and pushing down the repetition lever to let you see the jack alignment, as described above. After the entire section is correct, move on to the next.

Some will say that it is best to align the jacks all in a straight line visually, even though the knuckles are a little off. I do not ascribe to this method, because it relies on perfectly aligned knuckles, which is not usually the case (even in the best actions there is a little misalignment!). There is a segment of the action travel that is not usually discussed, but which I want to bring up here. For lack of a formal term, I will call it the "Letoff Drag Distance," or LDD for brevity. This is the small part of the key travel in which the jack is in contact with both the letoff button and the knuckle. This segment of key travel is actually a part of the aftertouch. In slow, quiet playing (when evenness of touch is most critical), the difference from note to note in the LDD can be enough to be noticeable to the pianist. This is another way to look at the problem caused by worn, flattened knuckles (or hammer butt skins); the Letoff Drag Distance becomes too great, which is felt at the key as a difficult, firm letoff.

Another way to look at this is to remember that the letoff will automatically be adjusted somewhat differently to compensate for slightly misaligned knuckles. If a knuckle in one note is closer to the flange rail, for instance, the letoff screw will be

adjusted slightly lower on that note, because the letoff is set to the strings, not to the knuckles or jack tender positions. If the jacks have been aligned to look pretty and straight instead of being aligned to each knuckle, then this sample note with the knuckle misaligned will have more LDD, and therefore it will have a little more resistance at letoff.

Step 9: Regulate the repetition lever height

The repetition lever height is one of those regulation steps that must be regulated twice. This is because the repetition levers are greatly influenced by the strength of the repetition springs, and we have to regulate the repetition springs later on. This begins to sound like a pitch raising discussion — the piano must be in fair tune before a fine tuning can be made to stay put, and an action must be in reasonably good regulation to do the final, careful regulation.

The best procedure is to quickly regulate the repetition lever height with the hammers raised, feeling the difference in height between the jack tops and the repetition levers. The best way to describe this is that the jack should be low enough so that your finger is just able to feel the sharp inside corner of the repetition lever window when you draw your fingertip across the wippens. If the jack is too high, you will not be able to feel the corner easily. If the jack is too low, your finger will catch on the corner. It isn't worth getting too technical here — you are going to re-regulate this later with an entirely different method, so measuring some exact specification in thousandths of an inch won't make it any better. Move quickly through the entire action, and strive for evenness and consistency.

The repetition lever's job is not to support the hammer when the action is at rest. It is supposed to help support the hammer, sharing the job with the jack. Although the spring is set strong enough to support (and even raise) the hammer, the jack also

must share in the support of the hammer at rest. If the jack doesn't share the load you will have some lost motion in the action. Even if the lost motion only amounts to compression of the knuckle skin, it is still a little lost motion that will give unstable hammer height regulation later on, and will affect the evenness of the aftertouch. For this reason, the final regulation of the repetition lever height should be by feeling the jack as it pulls out from under the knuckle.

This will be done after the repetition springs have been regulated, which is to be covered later; but I want to finish describing the method of doing this while we are discussing the wippens. Place the action on the workbench, turned around with the hammers toward you and the keys away. Raise the hammers up in one section, and lower the one note to be regulated. With one hand, reach around to the jack tenders and very slowly move the jack out and in under the knuckle. Adjust the repetition lever screw until you can easily feel the jack dragging out from under the knuckle, and then until the jack won't reset fully under the knuckle without help from your finger. Then turn the screw in again just enough to let the jack reset fully under the knuckle on its own. The reason I like to have the other hammers up in the section is to allow me to look at the jack regulating punching as it contacts the spoon — this is the best way to insure that the jack is resetting fully when you let it go.

After the regulation is done, you should still be able to feel a very slight drag on the jack as you pull it out from under the knuckle. The combination of feeling this rubbing, and visually insuring that the jack is resetting fully, is the best and safest way to be positive of the correct repetition lever regulation. It also is a great troubleshooting tool, as a problem with the jack centers or with alignment and traveling will be immediately obvious.

My next article will really get into the thick of my regulation philosophy, that of regulating by aftertouch, and establishing the best regulation parameters for each action to give the best performance possible. It will be called Aftertouch and Action Travel: The balance of letoff, blow, and dip.

The first seven articles in this series on grand action regulation have run in *Journals* from March, April, July, August, September and November of 1993 and January of 1994.

Regulation Checklist:

Regulation Step	Related Items
1. Locate action	Replace stop block cloth. Repair keyframe at unacorda lever contact. Repair / tighten keyframe joints. Clean/polish keyframe guide pins/springs. Locate damper action to keys.
2. Bed keyframe	Replace keyframe felts. Replace key pins.
3. Square and space keys	Key tops. Key buttons. Cleaning of key wood. Key bushings. Key balance holes. Backchecks.
4. Level all keys	Check, reset case part alignment.
5. Space and travel action <ul style="list-style-type: none"> a. Travel hammers b. Space hammers c. Space wippens d. Travel wippens e. Travel underlevers f. Space underlevers 	Action centers. Hammer head alignment on shanks. Space jacks in repetition lever window. Rept. lever and jack (Dag, Emralon, etc.)
6. Set action spread	Bolster or replace Knuckles.
7. Pre-regulate repetition springs	Clean/lubricate spring grooves. Correct spring bends. Replace springs. Inspect/replace silk spring cord (if any).
8. Regulate jacks to knuckles	Align knuckles.
9. Regulate rept. lever height	Check/service wippen, jack, rept. lever centers.

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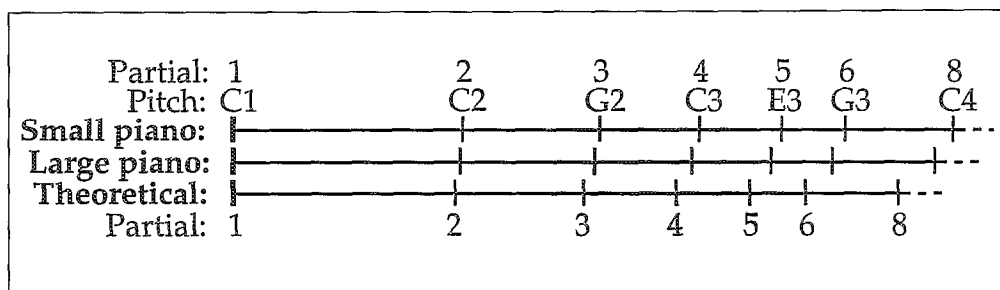
Inharmonicity IN A NUTSHELL

Michael A. Kimbell, RPT
Contributing Editor
San Francisco Chapter

In this month's article we shall explore the subject of inharmonicity, which is the slight out-of-tuneness of the partials of a vibrating piano string. I shall explain and illustrate how inharmonicity creates differing types or sizes of octaves. I shall then go on to explain how a piano tuner can compensate for the instrument's inharmonicity by slightly modifying the aural overtone tests described last month.

As we have seen previously, for a typical midrange string the second partial is approximately one or two cents higher than it should be theoretically, the third partial is perhaps 5 cents sharp, the fourth partial 8 or 9 cents sharp, and so on. A gradual increase in the actual values occurs as one moves outward from the midrange. **Example 1** illustrates graphically how the overtones or partials of a given piano string are progressively sharper than they would be if they followed the theoretical

What happens when we attempt to match the inharmonic partial series of two notes an octave apart is shown in Examples 2 through 5, which illustrate four different types or sizes of octaves. (You can compare these diagrams with the examples in last month's article on overtones.) In last month's diagrams, which followed the harmonic model, the partials appeared to match simultaneously at several levels: if two series were perfectly aligned at the 4:2 level, they were apparently also aligned at

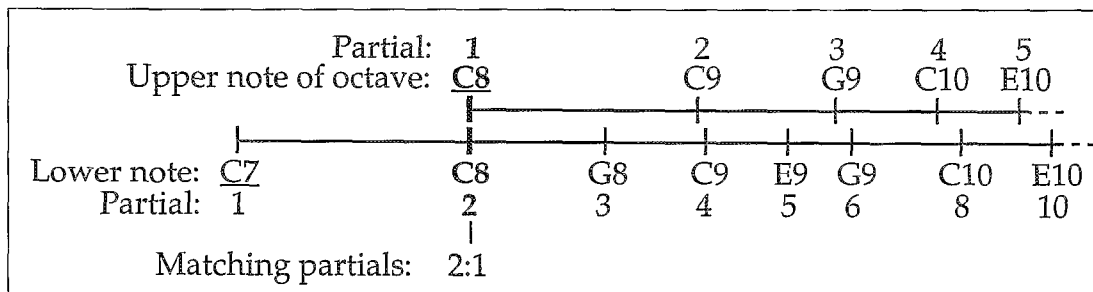


Example 1 - Effect of inharmonicity on partials

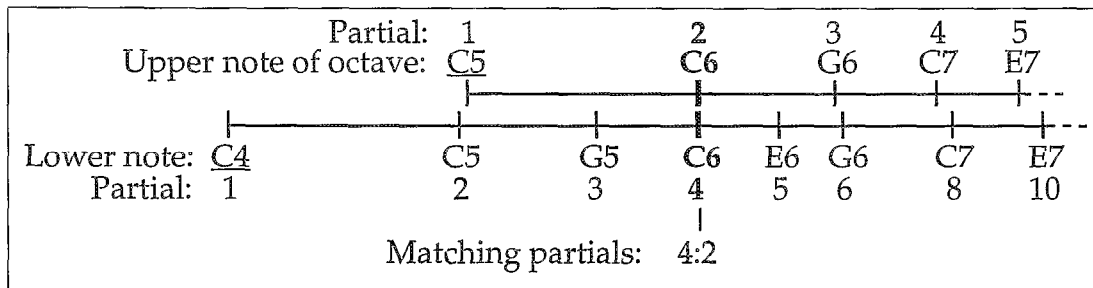
model. According to theory, the partials should be "harmonic"; that is, the higher partials or vibrations should be exact multiples (double, triple, quadruple, etc.) of the fundamental vibration rate of the string, as described in my article on beatless intervals. Because they don't follow harmonic theory exactly, the partials of piano strings are said to be "inharmonic." As **Example 1** also illustrates, the shorter and relatively thicker strings of small pianos have greater inharmonicity than the longer strings of large pianos; for instance, the note C2 has much greater inharmonicity on a five-foot piano than the same note on a seven-foot piano. Within the same piano, bass strings and high treble strings, which are thicker relative to their length, have greater inharmonicity than strings in the midrange.

the 6:3 level, at the 2:1 level, and so on. In the present examples we see that in reality piano strings behave a bit differently: if the partials are perfectly matched at the 2:1 level, as in **Example 2**, they are slightly mismatched at the 4:2 level, rather more mismatched at the 6:3 level, and progressively even more mismatched at higher levels. In other words, if the octave is "in tune" at the 2:1 level, it is narrow at all the other levels. An octave which is "in tune" or matched at the 2:1 level is called a "2:1 octave."

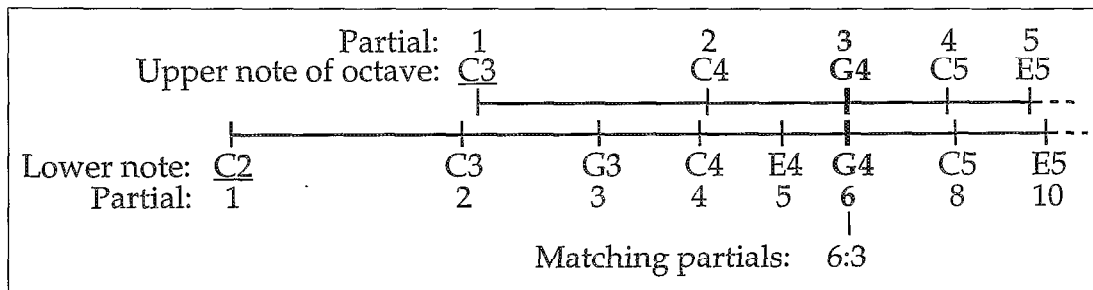
The "4:2 octave," in which the fourth partial of the lower note of the octave matches the second partial of the upper note, is illustrated in **Example 3**: here the octave is wide at the 2:1 level, "in tune" (with matched partials) at the 4:2 level, and narrow at the 6:3 and higher levels. Likewise, the "6:3 octave" in **Example 4** is wide at



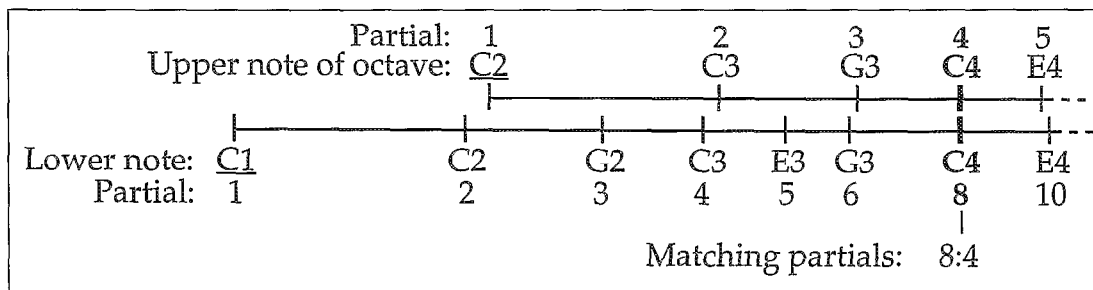
Example 2 - Octave with matching 2:1 partials (high treble)



Example 3 - Octave with matching 4:2 partials (midrange)



Example 4 - Octave with matching 6:3 partials (bass)



Example 5 - Octave with matching 8:4 partials (low bass)

the 2:1 and 4:2 levels, "in tune" or matched at the 6:3 level, and narrow at higher levels. **Example 5** illustrates the "8:4 octave" in a similar manner. If we assume that Examples 2 through 5 apply to a particular octave in a particular piano (say C3-C4 in Model X), we see that the types of octaves vary slightly in width, the 2:1 octave being the narrowest, the 4:2 octave slightly wider, the 6:3 octave slightly

wider again, and so on up through the 8:4, 10:5 and 12:6 octaves (the last three usable only in the low bass of large pianos). Except for the occasional very poorly-scaled spinet, most octaves in most pianos will follow this pattern of increasing size according to matching of partials.

You can actually hear the differences between octave sizes yourself, especially in a small piano.

Quite often a bass octave has prominent beats at two different positions, and you can eliminate only one of the two beats (or else choose a midway position and allow two slow beats to co-exist). In technical terms, you would have to choose between partial matching at either the 4:2 or the 6:3 level, or else find a compromise between the 4:2 and 6:3 octave positions. Aural tests will demonstrate the situation for you: either the M3-M10 test (for a 4:2 octave) or the m3-M6 test (for a 6:3 octave) will work with test intervals beating at the same speed, but it is impossible to get *both* tests to work with equally-beating test intervals.

A comparison of two different octaves in the same piano shows a different pattern: a 4:2 octave in the bass, where inharmonicity is greater, is slightly wider than a 4:2 octave in the midrange. Likewise, the octave C3-C4 tuned as a 4:2 octave (with partials matching at the 4:2 level) is slightly wider on a small piano than it is on a large piano. These comparisons are not readily apparent to the ear, but can be made easily with an electronic measuring device such as the Accu-

Tuner. If you are thinking that the "ideal" (or close to ideal) tuning is measurably different for each piano you tune, you are correct.

Let us now explore procedures for tuning octaves that will take inharmonicity into account and yet allow us to approach the ideal. Since the lowest partials are most prominent in the treble and somewhat higher partials are stronger in the bass, it still makes sense to tune 2:1 octaves in the treble, 4:2 octaves in the midrange and

6:3 octaves in the bass, with perhaps 8:4 or even 10:5 octaves in the low bass of large pianos — in short, the loudest partials are the ones we

would want to match. But since a given octave can be of only one type, we are left with the question of when and how to shift from one kind of octave to another. In addition, we need to investigate the question of how to tune acceptable double and triple octaves, since inharmonicity will cause mismatched partials of notes two and three octaves apart as well as notes only one octave apart.

Let us explore the last question first by looking at **Example 6**, which illustrates the tuning of three contiguous 2:1 octaves: C5-C6, C6-C7 and C7-C8. As you can see from the example, the fundamental of C7 is lower than the fourth partial of C5, hence the 4:1 double octave C5-C7 is a bit narrow and would have a slow but bothersome beat. Likewise, the fundamental of C8 is considerably lower than the eighth partial of C5, hence the triple octave C5-C8 is unacceptably narrow and would

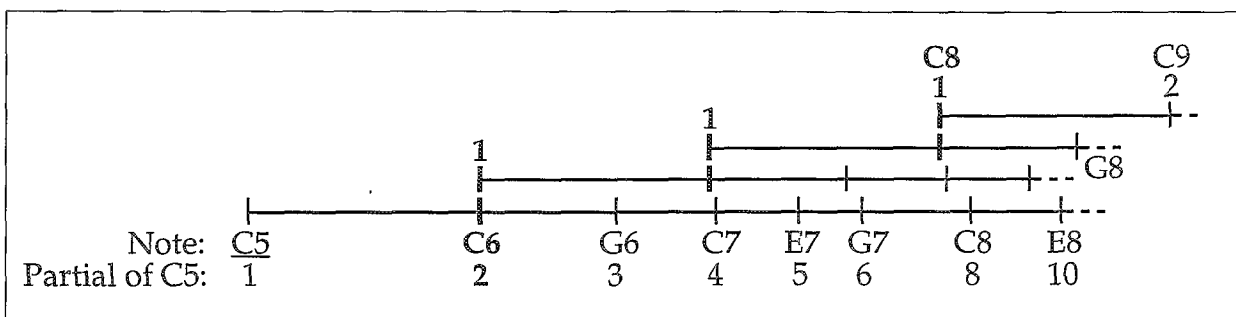
beat quite rapidly. (The M3-M17 test for double octaves and the M3-M24 test for triple octaves would confirm the situation: the M3 would beat more slowly than the M17 or the M24. The test note is a M3 below the lower note of the double or triple octave.)

As a possible remedy, let us widen C5-C6 to a 4:2 octave but leave C6-C7 and C7-C8 as 2:1 octaves, as shown in **Example 7**. Now the double octave C5-C7 is perfectly in tune (as

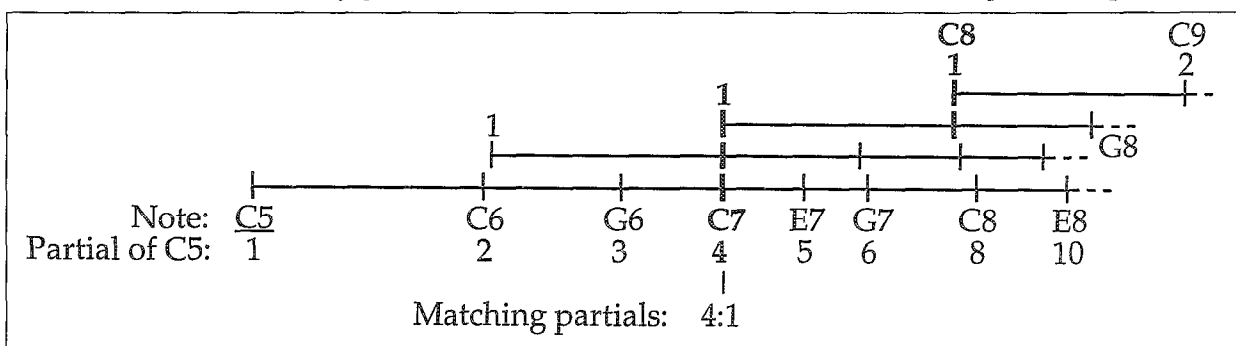
you can see from the matching partials at the 4:1 level), but the triple octave C5-C8 is still narrow, although not as badly as in Example 6. The double octave C6-C8 is also a bit narrow. Perhaps if C6-C7 were also a 4:2 octave, then C5-C7 would be a bit wide but C6-C8 and C5-C8 would be very close to being beatless. **Example 8** illustrates just such a situation of two consecutive 4:2 octaves, with a wider 6:3 octave below them for good measure. (*Example 8 is transposed two octaves down from the previous examples in order to place the 6:3 octave into a suitable range of the piano.*) Here the double octaves C3-C5 and C4-C6 are a little bit wide, but the double octave C5-C7 and the triple octave C3-C6 are very good. Nevertheless, we would

(that is, with evenly increasing beat speeds as they are played chromatically upward), and if progressing tenths and sevenths are maintained across the keyboard with occasional tests for single, double and triple octaves, then the shading occurs automatically. An exception is sometimes found at the “break” in small pianos, particularly at the change from plain to wound strings on the same bridge in the tenor: depending on the piano, a sudden change of octave type may improve the clarity of octaves and fifths, sometimes with a necessary sacrifice in the progression of thirds.

The final authority on the amount and manner of “stretch” to use is the overall sound of the particular octave on the particular piano you



Example 6 - Stacked 2:1 octaves (narrow double octave)

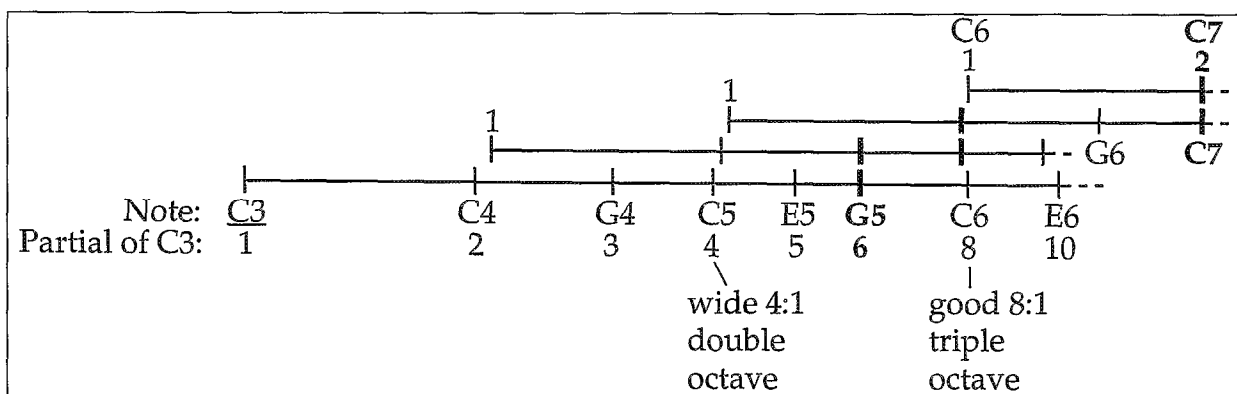


Example 7 - Stacked 4:2 and 2:1 octaves (4:1 double octave)

still need to do a little more “stretching” if we wanted to carry good double and triple octaves all the way to the top of the piano. How much can we get away with, and how do we accomplish the task?

Many tuners, including myself, prefer to shade from one octave type to another across the keyboard. If the temperament is carefully tuned with perfectly “progressing” thirds, sixths and tenths

happen to be tuning. The octave should give at least the *impression* of being beatless, which means that even if it is not perfectly beatless at all levels it is nevertheless very close to being beatless. On a good piano, the tuner should be able to detect beats in treble octaves played all the way to the top of the keyboard, and to control the speed of these beats with very small movements of the tuning hammer. Likewise, in the low bass the



Example 8 - Stacked 6:3 and 4:2 octaves

tuner should be able to distinguish the points of greatest clarity and of greatest resonance in an octave. Usually a "resonant" bass octave (with greatest "depth" or "boom") is very slightly wider than a clean, clear bass octave; depending on the piano, the tuner may wish to aim either for clarity or depth, or a compromise between the two. Because partials above the fundamental are sharp, any octave will either be clear and beatless, or very slightly wide of beatless in the interest of clear double (or possibly triple) octaves. A midrange octave which beats at one half beat per second is a *very* wide octave for a nine-foot grand, and is probably too wide for smaller pianos. In the high treble, however, octaves beating at one beat per second may be acceptable, depending on how prominent the beats are on that particular piano, and on how important good triple or quadruple octaves are in the music to be played. In other words, resonance over the entire range of the instrument is purchased at the expense of clarity within narrower ranges.

Even though the tuning of good octaves begins and ends with well-trained subjective judgement, it is still very important to be able to analyze what we are doing in terms of matching (or nearly-matching) partials, and to apply the appropriate aural tests, not only as "quality checks" but also as training and refinement of our musical judgement. Even if we wish to temper the octave a tiny bit to compensate for inharmonicity, we can still employ the

appropriate test note and pair of test intervals, comparing the beat rates of the two test intervals very carefully. In the low midrange of a larger piano, for instance, we can tune a "stretched 4:2 octave" which is between a "4:2 octave" and a "6:3 octave" in size (that is, wider than an octave with matching partials at the 4:2 level but narrower than an octave with matching partials at the 6:3 level). For this "stretched 4:2 octave" we still use the M3-M10 test,

treble, the double octave becomes more and more "in tune" with the M3 and M17 beating closer and closer to the same rate.

General guidelines for the use of "stretched" versus "clean" octaves are shown in Example 9. As we have seen from Example 1, small pianos have greater inharmonicity and allow little room for additional tempering of the octaves; good triple octaves on these pianos are not possible without

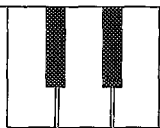
	Small piano	Large piano
High treble	Clean 2:1 octaves, narrow 4:1 double 8ves	Stretched 2:1 octaves, clean 4:1 double octaves
Treble	Stretched 2:1 octaves, clean 4:1 double octaves	Clean 4:2 octaves, stretched 4:1 double 8ves
Midrange	Clean 4:2 octaves, stretched 4:1 double 8ves	Stretched 4:2 octaves, stretched 4:1 double 8ves
Bass	Clean 6:3 octaves	Stretched 6:3 octaves
Low bass	6:3 octaves	8:4 octaves

Example 9 - Rough guidelines for tuning octaves

but instead of having the third and tenth beat at exactly the same rate, we let the tenth beat very slightly faster than the third. How much faster? Perhaps up to one quarter beat per second faster, or perhaps even more on a very large piano, but in any event the difference in beat speeds between the M3 and M10 should be less than the difference in the M6-M10 test for perfect fifths in the same register. In the same manner, the 4:1 double octave is "stretched" in the midrange of most pianos, with the major seventeenth beating slightly faster than the major third in the M3-M17 test; in the

stretching the single octaves well beyond acceptability.

Far from being a necessary evil, inharmonicity is an integral part of the sound of the piano, contributing to the almost orchestral richness and character of the tone. When we carefully temper and balance the sizes of octaves and compound octaves, while maintaining an even temperament of thirds, fourths, fifths and sixths and their compounds across the entire keyboard as much as we can, then the piano sings with its greatest eloquence.



Bare Bones Regulation

Richard Anderson, RPT

Feature Writer

Chicago Chapter

This month, a question about "real world" grand regulation.

Question: A while back at a PTG meeting, a member discussed the bare bones type of regulating that would make the greatest difference in touch in an upright piano that either was not really worth regulating, or the customer would never consider spending the money to do it right; namely, adjusting blow distance, letoff, and lost motion. How about the equivalent for those many old grands out there that have forgotten the meaning of the word repetition? Which regulation steps would make the most difference with the least amount of time and money expended?

Answer: It helps to visualize how pianos get out of regulation when deciding how to put them back in regulation. Pianos go out of regulation in three areas:

- changes in alignments;
- changes in friction;
- loss of aftertouch caused by dimensional changes in action parts.

Changes in alignments are caused by:

- loose screws;
- change in moisture content and therefore dimensions of wooden parts;
- changes in dimension of felt and other non-wood parts caused mostly by gravity and wear.

Changes in alignments, unless caused by loose screws, are usually slight over the life of a regulation. And while alignments are important to the foundation of a complete regulation, they are not part of a speedy regulation.

Changes in friction are caused by deterioration of bearing surfaces by wear or corrosion. Like changes in alignments, changes in friction (except for verdigris) are minimal compared to loss of aftertouch, and adjusting friction would not be part of a quickie regulation. For actions that are bound up with verdigris (think brass rust), one of the new chemicals such as Protek, sold by the supply houses works great. Apply to the bushing cloth and between the flange and birdseye. The center will loosen almost immediately and be far looser than necessary, but will rebound back to a normal torque. Repeat if necessary. If it won't free up with one of these solutions you'll have to repin.

Loss of aftertouch caused by dimensional changes in action parts is the biggest source of loss of regulation. It occurs at three primary points:

- balance rail felt punching compaction;
- wippen cushion compaction;
- knuckle compaction.

These three soft parts get squashed between hard parts driven by the player's fingers (key, capstan, repetition lever) and the mass of all the other action parts (that old man gravity) stacked on top. The compaction of these three parts can lead to complete loss of aftertouch in short order and render an action unplayable. Restoring this loss of aftertouch is all that's necessary for our quickie regulation, assuming the flange screws aren't loose, and friction is acceptable.

A quick regulation procedure would then be:

1. level keys, even if it's just adding .020" or whatever is necessary around middle C and tapering out an octave or two from there;
2. bolster knuckles if necessary;
3. crank up those aftertouch adjusters (capstans) until you have sufficient aftertouch to make that action play properly (usually about .060").

You won't need to do much capstan cranking after doing steps 1 and 2. These three steps will restore the majority of an action's loss of regulation and make the biggest improvement in playability for the least time spent.

Paul Monroe, RPT
Orange County Chapter

The purpose of this series of articles is to reach out to the inexperienced tuner and help create a good foundation on which to build a profession.

The last article ended with a checklist for the purpose of establishing a routine that will help you service a piano. This article will begin with a detailed description of these items. But first there is one thing I want to mention briefly—your tool kit.

As you open your tool kit to service a piano, it should be neat, clean, compact and impressive. If you want to learn how to accomplish this monumental task, attend one of the seminars given by Mr. Jim Harvey, called "The Care and Feeding of Tools." This is another one of those tangible benefits of attending a Guild sponsored seminar or convention.

Now on to the checklist. First you should observe the appearance of the piano. Is it cared for in a proper manner, is there any veneer missing, is it clean, is it a new piano? I mention these items only to motivate you to give a complete and thorough visual examination of the instrument.

Observe the pedals. If the sustain pedal is shiny and the others are dull, the piano probably is used a great deal. Record this in your memory: "used a lot."

Moving to the vertical, if it is a new piano the lid hinge may be on your left and not on the back edge of the lid. Do you have a prop to hold up the lid, and will the lid touch the ceiling? You may find pianos located underneath stairs where you have about one foot of clearance. When I find this style of lid, I usually remove the lid hinge pin very carefully and remove the lid for clear access to the tuning pins and action.

When the lid is hinged on the back edge, there are several types of lid props available. If you are creative you can design your own. However, if you do not have a lid prop and elect to lean the lid against a wall, be sure to pad it with a thick cloth or felt.

When you are inspecting a grand, lift the lid about two inches and move gently from left to right (or right to left). This will tell you if the lid hinge pins are in place. If they had been removed and you lifted the lid with gusto you can imagine the results. Next remove the music desk and observe how clean the piano is. If the soundboard can't be seen due to layers of dust, you have an opportunity to sell a cleaning job. You know the action will need cleaning if the soundboard is in this condition. Have you ever cleaned a soundboard before? Later on I will give you a list of tools you will need plus a little procedure you can use.

While you are looking at the soundboard, is it cracked? If it is, check to see if there is space between the ribs and the board which is large enough to slip in your business card. This is not an advertising gimmick. If you can slip your card between the board and any of the ribs, the piano has a major problem. (See Figure 1.)

Your tuning will not be stable, and the tone production will be poor. The technical reasons are interesting and there are ways to solve this problem; however, it is not the intent of this column to cover that deep a technical item. Read past issues of the *Journal* that cover this problem in complete detail or attend a soundboard seminar and learn all you can about this subject. The intent of this column is to apprise you that these conditions do exist and that they do cause you problems in tuning, especially with stability. In my opinion, a cracked soundboard isn't all that bad as long as the ribs have not separated from the board and you do not have any buzzing due to the crack. When you do find a crack, don't immediately tell your client "your soundboard is cracked" until you really know if it is a structural problem or just cosmetic.

As you inspect either the grand or the vertical you should observe the condition of the hammers. They may be flat-faced and grooved. (See Figure 2). I'll describe later on

**Hammer
Flat
& Grooved**

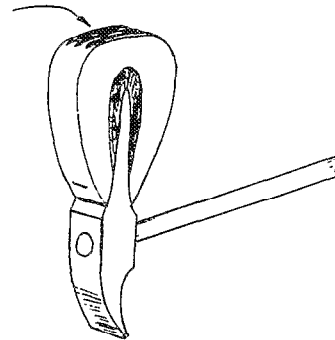


Figure 2

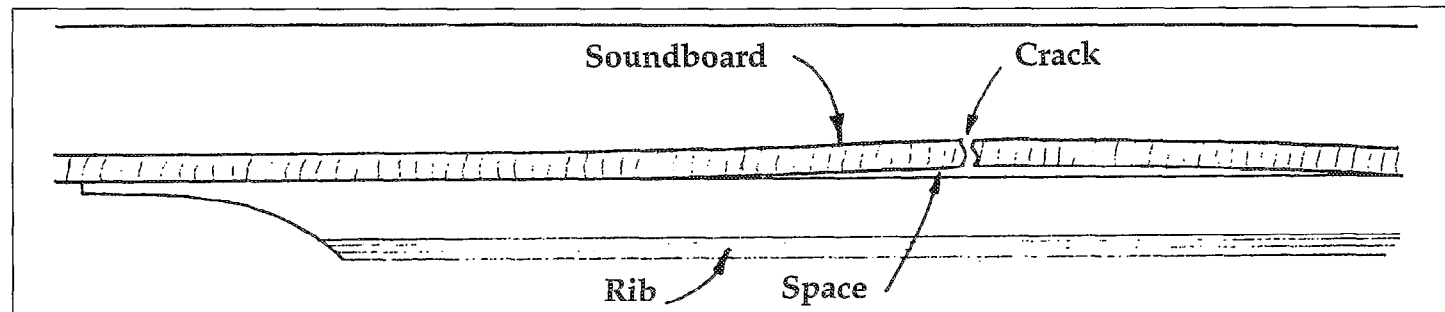


Figure 1

what this condition will do to tone and how it affects beat rates.

At this point you have observed the piano and played all the notes. Did they all work? Any rattle such as pencils on top of the keys you may find in a grand? Any unusual sounds or feelings? If you find any hammers missing you must be prepared either to put back what is there or replace with new ones out of your stock. Again, refer to past issues of the *Journal* for details on what to do when you find this condition or contact a fellow technician from your local chapter to give you help or advice. The point here is that you should be prepared to make the piano playable. If you can't play it, you can't tune it.

When you played all of the notes—did you listen? After you have been tuning for any length of time you will become familiar with what the different sounds are telling you. For example, if the trichord unisons are

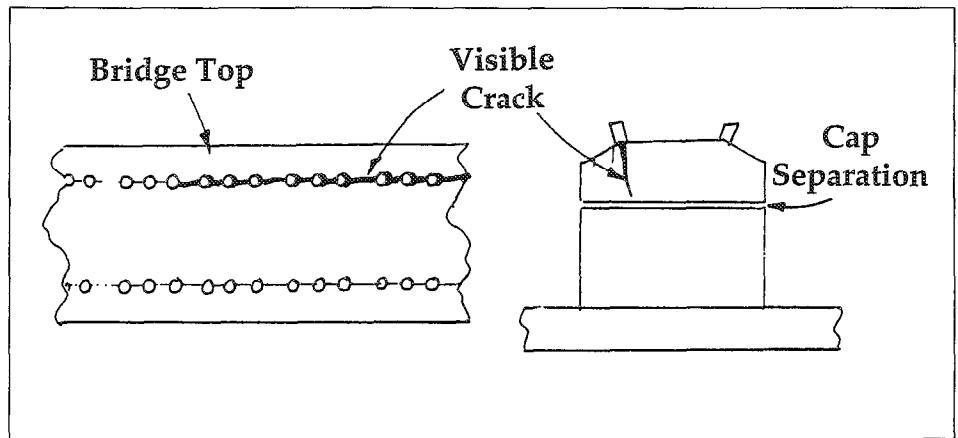


Figure 3

more than an eighth tone apart it may be telling you the pinblock is in bad shape. Beware when you start to turn pins. If the pinblock is bad, most likely the pins are relatively loose. If you aren't careful, you can easily break a string.

Another discovery you may make from "running" the keyboard is that the rim plate screws are loose.

After some experience you will be able to tell which plate screws need tightening. At this point check all the plate screws using a heavy-duty screwdriver with a squared shank to fit your tuning hammer. Use a socket wrench for those pianos with hex head screws. Be especially cautious on some of the American made grands that have the acorn nut to hold down the plate. The threads on this type of nut strip very easily.

You will find other screws in the middle of the plate. **DO NOT TOUCH.** They are the nose bolt nuts and you should have no need to be concerned at this point if they are tight or not.

Rim plate screws should be snug. You shouldn't be able to turn them more than one degree. If any of them can be turned more than five degrees, I suggest you work your way around the perimeter, turning each screw about five degrees at a time. Continue around the perimeter until all of the screws are snug.

If you haven't guessed by this time, the piano will not hold a tuning if these screws aren't snug. If you do a pitch raise it will not hold.

For the plate screws on the bottom of a vertical piano you will notice in most cases your tuning hammer will not fit with the screwdriver due to the lack of space between the plate and the tow board. For this you can use a small pair of vise grips to grip the screwdriver in a convenient place.

While you are looking at the bottom of the vertical or the end of the

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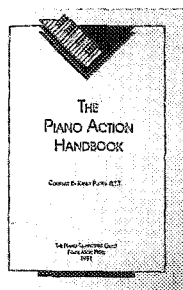
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grand, observe the condition of the bridge. Look for cracks along the bridge pin line in both the tenor and the bass bridges. (See Figure 3.) Have any of the pins moved out of position? If they have there is little chance you will be able to tune the piano without doing repair work on the bridge. Look further. Is the bridge securely glued to the soundboard? Your tuning will not hold if it isn't, and you will be able to notice a reduction in volume of the piano as you play through that section of the piano.

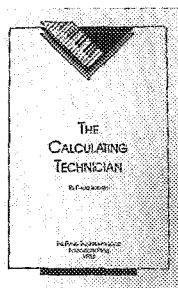
To give yourself better visibility of the bass bridge in the vertical, brush off the dust and dirt with a soft, natural bristle brush. This tool is also handy when you want to clean around the tuning pins on the grand.

In the next issue we will begin to mute and tune the piano.

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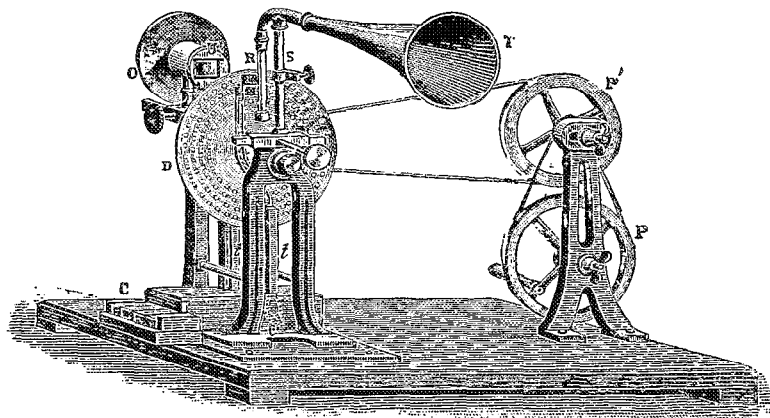
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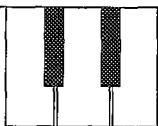


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Museum and Archives by Fred Odenheimer.

As part of its adopted mission—"...to participate in the preservation of resource materials..."—the PTG Foundation has taken on the challenge of accumulating an archive of materials in piano technology, as well as a facility in which those materials can be displayed and used. If you have historical materials that you would like to donate to the Foundation, please contact Bruce Dornfeld, RPT, 2134 Walters Avenue, Northbrook, IL 60062.

If you wish to support this important effort financially, please send your contributions to the Piano Technicians Guild Foundation, 3930 Washington, Kansas City, MO 64111-2963.



[Ed. note: This article is appropriate for the SPELLS awareness theme this month. It is reprinted from the October 1983 Journal.]

What would you say to a job which pays less than the going rate, has more potential problems than other piano work, puts you in compromising situations, and requires you to tune in a room full of telephones ringing, people talking, and other instruments being played? What would you say to a job which offers you a chance to be paid to hone your skills, keep in touch with the latest developments in the piano field, and develop helpful relationships with the service departments of leading piano manufacturers? Would you believe me if I said it's the same job?

I'm talking about dealer work, of course. Store work has been very beneficial to my career, yet many technicians are prejudiced against it. I've even overheard a chapter officer advise a novice technician that she would do better to support herself waiting tables than to take a dealer job. What opportunity does waiting tables offer to practice tuning or repairs or even keep in touch with the piano business? Of course, there are some disreputable dealers; but there are also those with an interest in the condition of the pianos they sell. Particularly for a beginning technician, an association with one of these has benefits. We owe it to the industry to see that new pianos get good service. In this article I'll offer tips on maximizing the benefits and dealing with the problems of store work.

I went to work for a dealer because I'd spent several years working only in the shop and my tuning skills were rusty, but I couldn't face tuning my own piano over and over again for practice. A floor tuning job is a good accompaniment to a rebuilding prac-

tice: after several days in the shop, it's good to have an opportunity to tune where the schedule is usually flexible and the pressure to perform less. Most dealers specify that a tuner need not overexert for a floor tuning. Even though you don't strive for perfection, it is helpful that the pianos sit around and you have a chance to follow yourself up and check for relative stability and musical results. Dealer work also offers a chance to work on good pianos which an inexperienced technician might otherwise avoid—an opportunity to tune a nice grand without the pressure of an artist hanging over you is beneficial. Practicing on old uprights is fine, but there comes a time when you need to work on a good piano to know if you're doing good work. If you have trouble, there is usually time to call another technician for advice or help. This can't be done if the movers are waiting, dolly in hand; but often the time schedule on a dealer floor is relaxed, and there are other technicians connected with the store who can help or supervise your work. If you are in the final learning stages, then, or take occasional breaks from tuning, a store job offers an opportunity to practice and learn with at least some pay.

Another payoff of store work is building a clientele. Most dealers include a free tuning after delivery; you have an opportunity to explain to the customer what their piano needs, and to present yourself in such a manner that they will call you when service is needed. You have the implicit recommendation of the store, a benefit which is particularly helpful to those of us who are younger or of a different gender

than the standard image of a piano tuner. Take advantage of this situation and your business will grow steadily. You also get customers who call the store for a tuner simply because they don't know whom else to ask. Unless there are balancing advantages for you, there is no

good reason for the dealer to expect part of the fee you collect for such tunings or to insist that the free-service customers contact you through him so he collects a fee for that also. After all, it is to his advantage to have someone reputable to recommend, and these collect referrals are to balance out the reduced rates you charge him.

One of the frustrations of dealer work is time spent waiting while instruments are being demonstrated—it is pointless to continue to tune. Many dealers prefer that you not even try, since customers find this pressures or distracts them. If there are repairs which can be made discreetly, do them. If not, the time waiting need not be all wasted. If the salespeople are competent, a lot can be learned from them. We consider ourselves a breed apart, but we actually must sell ourselves and our services, and we share a common task of running a business. Good sales techniques can be picked up from the old hands around a piano store.

A well-run store offers an opportunity to study small business management. If, like me, your background is liberal arts rather than business, this chance to "eavesdrop" on the workings of a going concern is valuable. (If it's poorly run, you can learn from that, too). Apart from just listening, talk with



the salespeople: they can be excellent contacts. Social chat is to your advantage, to let them feel they know and trust you; also be tuned in to developments and rumors about the business, the manufacturers, etc. Most dealers notice and appreciate the technician who takes

some interest in the welfare of the store beyond just the condition of the pianos, and, in truth, the better informed you are, the better equipped you are.

Don't get in the habit of complaining to the salespeople, though. If there is a problem with a piano, you're the technician—fix it. The owner or manager should be informed of problems, to approve repairs and extra charges, or to refer you to the manufacturer's service department, but they don't want to hear you rant and rave. Cursing and throwing tools is seldom helpful and will not impress the dealer with your ability to handle difficult situations. Think of the owner and his salespeople as customers, and treat them with the same courtesy you would in their homes. Sometimes this is hard when they chatter and type and interrupt you with 14 renditions of "Stardust"; it's easy to feel unappreciated. If you have a legitimate complaint, try to work it out calmly with the manager. Don't just adopt an adversary attitude or indulge in continual low-level griping.

As with other problems, the more you emphasize that it is to the store's advantage for you to be able to do good work, and the more you present yourself as interested in the welfare of the store, the better your chances of success. Some dealers stipulate that they want tuners on the floor at certain times when business is usually slow; this is reasonable and gives you more right to ask for the best possible conditions during those hours. Also, if you can arrange to come in regularly on a particular day, they can schedule deliveries around that and are less likely to schedule a delivery and then call you in a panic because the piano isn't tuned.

Finally, remember that we seldom get complete silence in homes, either. The combat experience of a showroom floor will accustom you to handling interruptions and noise as no other situation can.

The foundation for good relations with a dealer is to find out what he wants. Some want pianos in fairly good tune with all the clicks and squeaks ironed out. Some want to take the piano off the factory truck, spend a maximum of 15 minutes servicing it, and deliver it

to the customer, planning further service only if there are complaints. The dealer's main concern is salability; moderate your standards with that in mind, and approach him with suggestions for improvement from that standpoint. He is then more likely to consider you an ally whose advice he can trust, rather than someone merely trying to cut into his profit margin. Tell him that the pianos will sell better if they sound and look good; customers will be happier if the piano arrives in good condition; it is less expensive for him and less stressful for the customer if problems are solved on the showroom floor. A customer who finds one defect looks for more; many difficult situations can be avoided by adequate service before the instrument is delivered. Situations may be complicated by the question of who should pay to correct a problem—the customer, the dealer, or the manufacturer? Store technicians must be familiar with the concrete terms of warranties, as well as the

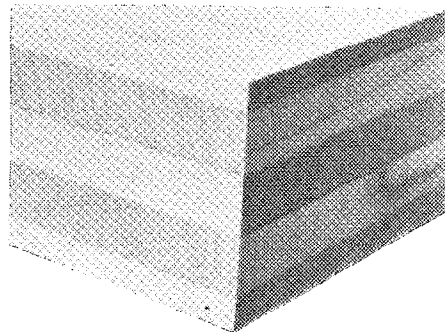
general service philosophy of the dealer and the manufacturer. Get an idea about these things before problems arise; chances are you will find yourself in the middle and need to know what to do. Avoid making promises for anyone else. Use the telephone or make a return visit, to be sure you are authorized before doing extensive repairs. Try to concentrate on technical problems, not financial matters which do not concern you.

If you are a reasonable person and a competent technician, the manufacturer's service personnel will notice, and will appreciate the work you are doing. They will want reports from you on recurring problems as well as strong points. If there is a system for reporting the condition of individual pianos, use it. Contrary to how it may seem, these reports do get read and changes made. Beyond that, it can work to your advantage for the service departments to get to know you; their trust enables you to help your customers, and

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may yield more interesting or challenging work for you as well. We have to accept the fact that new pianos are often not in as good condition as we would like; they usually don't get detailing in the factory, and it is the dealer technicians who perform this final and important stage in piano manufacturing. The service departments may understand this better than the dealer; try to work out with both of them who will pay you for the extra work beyond a simple floor tuning so you can at least feel that the pianos are in adequate condition.

What is appropriate service? Here's my typical service procedure on a new vertical piano. Remove the front and bottom boards and other case parts to have a clear view and access to all parts of the piano. Play every key (with and without the pedals depressed) and chalk mark where there are problems. Quickly look at the bridges, trapwork, soundboard and ribs; nothing is more frustrating than to tune a piano and then find a major defect which requires its return to the factory. I also check the piano over first to judge what is needed to get it in showable condition; if I need to emphasize more troubleshooting and less tuning I can allocate my time accordingly.

A smooth-sounding tuning is important, but the piano should also be at pitch or slightly sharp. New pianos fall flat quickly and need to be stabilized with frequent tunings; the showroom floor is the perfect place to master the 15-minute pitch change. If you raise pitch and tune it on the floor, then tune it again fairly soon in the home (try to get the dealer to stipulate that free tunings must be done within 3 months of delivery), half the battle is won. If you convince the customer to have you return in six months, the piano will always be more stable and easier to tune than one which never receives those first frequent tunings. If I find a piano flat, I pull it up first by a third as much—in other words, if it's 15 beats flat, I pull it 5 beats sharp, and run quickly through an entire "tuning." What this does is reload proper tension on the strings and pressure on the soundboard; it will settle back around pitch as quickly as you are done. Often new pianos are very uneven, being much

flatter in some sections than others, and a quick evening of pitch will enable you to do a better and more stable tuning than to attempt to bring it into shape in one shot. It's less work in the long run: just bang through it, and I do mean bang—get those strings moving!

After pitch location, I concentrate on smooth unisons and enough octave stretch to allow for some settling. The absolute uniformity of intervals we usually strive for are only appropriate for the preparation of artist instruments, or when the dealer requests it and will pay for the added effort. Otherwise, tune for a pleasing result which makes the instrument showable, gives indication of characteristic tone, and sets a foundation for pitch stabilization.

It's important that every note work; even a customer with a tin ear can find a sticking key. Check with the damper pedal engaged, so the weight of the damper lever is not there to assist sluggish keys. Use the palm of the hand to depress keys in groups and watch for slow returners. Check the case parts to see they aren't binding. Ease keys or remove wood where they are rubbing each other (carry a rasp so you can do this quickly).

Pull back on the hammer rest rail to see that the hammers follow: if not, there isn't enough lost motion. Now, as we know, the place to correct lost motion is in the capstans, right? Wrong. In dealer work, look for "wholesale" solutions to problems. In this case, adding thin felt (nameboard felt) to the rail supports will solve the problem. Drop and compact actions need appreciable lost motion or the jacks will hang up; err on the side of caution to allow for further settling.

Another common problem is insufficient or excessive dip. Here again, use a wholesale approach: change the balance rail. In some pianos, there are several pairs of screws to make this adjustment; one to support the rail, another to lock it on the lower screw. Other pianos have wood or cardboard shims. Look for these under the keys and use them to adjust the rail to correct the dip. This isn't cheating; in the factory, uniform punchings are placed under the keys and dip is set in much this manner.

Employ this "wholesale" approach in analyzing other problems in the action. If one jack doesn't work, an individual button may need adjusting, but if a whole section of jacks hang up, look for a rail which has moved or something else which affects them all before adjusting individual notes.

Clicks and buzzes usually do have to be chased down note by note. Look for loose screws, or insufficient glue at the hammer head, butt and catcher joints. There may be drips of glue in the action -- on the underside of the bridle strap, for instance, where the jack will click against it. Watch for foreign objects in the action -- bridge pins, stringing hooks, burn-in knives, etc. It's good policy to remove debris from anywhere inside a piano before it wanders into the action.

A buzz can indicate a serious problem, such as a loose rib or soundboard, or it can be as minor as a loose music desk screw. Look for simple solutions before you panic. There can be problems with the strings and bridges which cause weird sounds or buzzing too. Misplaced notching, which can be corrected with a sharp knife, insufficient side bearing, which requires bridge pins to be bent over (slightly) or moved, or debris caught on or under the bridge are things to watch for. Of course, buzzing bass strings need to be twisted. With the advent of automated stringing, coils have been more uniform but occasionally a becket needs to be squeezed or even straightened out and reset to keep the string from pulling out of the tuning pin.

Avoid removing the action, but sometimes it's inevitable. Getting it back in is tricky; the action brackets won't line up with the bolts or bolt holes. This is due to the way actions are installed in vertical pianos; usually, the upper bolts are fastened first and then the supports are installed from underneath. It's easy for a worker to be a little heavy-handed tightening these and actually spring the action brackets. Then the piano is regulated. It comes to the store and something breaks, you remove the action and can't get it back in. What to do? If the bolts themselves are the removable kind, be sure to start them all into the plate

before tightening any down. If this doesn't help or doesn't apply, you must turn down the lower supports until the brackets align, secure the action, and then turn up the supports again until the action resumes its original position (watching lost motion is the best way to check this—the hammers will stand up off the rail when you first reinstall the action on lowered bolts).

Check the pedals; if the bars bind on each other or on the plate, rasp off wood. Be sure the pedals are firmly anchored and correctly spaced—put cardboard under the support blocks if they groan on the board. Adjust so there is lost motion.

Put the case back together, checking the fit. Look for dings in the finish and fix or report them.

With luck, none of these problems will recur after delivery and the next thing heard from the customer is a request for the free tuning. If the store

gives you the name and you call to set up an appointment, be sure to give them your name and phone number. This does two things: it enables them to reach you directly if a cancellation is necessary. It also has a psychological effect—many people think they'll remember an appointment and won't write it down. If you give them a number, though, they'll make a note. No-shows when you go to do a free tuning are aggravating; work out with the dealer how you are paid for these. It goes without saying that you honor appointments punctually. When you do go, take the time to explain to the customer that a new piano needs frequent tuning—three times in the first year—to stabilize it, that tuning is virtually the only service they need to protect their investment, and that their children will develop good ear training only by playing an in-tune instrument. Tell them how to clean the keys and the case and to leave the fallboard open to help prevent

sticking keys by allowing air to circulate. Check that the bench leg bolts are tight. Use this chance to make them your customer—dress well, act professionally and discipline yourself to spend the extra time and effort, even though you are making less on this initial call. Leave your business card and/or a sticker with the tuning date, and keep a file so you can call or send reminders. I have the customer self-address the card; in six months when I send it, they see their own handwriting, which reminds them of their commitment to take care of their piano. If you miss this chance, you let an excellent business-building opportunity slip by.

Dealer work has problems but it has rewards too. Someone has to do it and it might as well be you as your competition. Keep a level head and a sense of humor and it can be a beneficial association for all concerned.

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March 10-12

Pacific Northwest Conference

Seattle Chapter—Bellevue Red Lion

Contact: Randy Rush

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March 12

Bluegrass Tuning Seminar

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27	28	
March		1
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LA PACE Plus	25	26

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9	10	California State...	
16	17	18	19
23	24	25	26
2	PA State Conference		
9	Pacific NW Conference		Bluegrass Tuning Seminar
16	17	18	19
23	24	25	26
30	31		
		1	2
6	7	8	Calgary 1-Day
13	14	Central West Regional	East Tennessee 1-Day
20	21	22	Florida State Seminar
27	New Eng. E. Canada Seminar	Intermountain Seminar	

S	M	T	W	T	F	S
May						
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8	9	10	11	12	13	New Mexico 1-Day
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				
			July		1	2
3	4	PTG's 37th Annual Council, Convention & Technical Institute				
	11	12	13	14	15	16
17	18	19	20	21	22	23

Pianoforte Tuners Association Convention • May 11-14
Ten Day Tour in Planning Process

The Pianoforte Tuners' Association will hold its annual convention May 11-14, 1994, at the Bothwell Bridge Hotel just outside Glasgow, Scotland. Ralph Long, member of the International Relations Committee of PTG and the Convention Sub-Committee Organizer for PTA, is in the process of arranging a tour for approximately ten days, either before or after the convention. Some of the sites to be included are Edinburgh, St. Andrews Golf Course, Aberdeen, stopping at Scone Palace—the crowning place of kings of Scotland, also visiting Glamis Castle—the birth place of Her Royal Highness Princess Margaret and the setting for Shakespeare's *Macbeth*. There will be a chance to explore Balmoral Castle, Crathes Castle and Gardens, Craigievar Castle or the Castles of Mar. Going further to Inverness, traveling south to Loch Ness, to Drumnadrochit, visiting the Nessie Exhibition Centre and also visiting Castle Urquhart, then on to Fort William and to see Ben Nevis, the highest mountain in the British Isles. Then leaving the Highlands of Scotland, visiting Glencoe, known for the massacre between the Campbells and the Mac Donalds, continuing south round Loch Lomond, and for the benefit of those who like whiskey, there are many distilleries which are open to the general public on organized tours.

This is only a brief outline of what you can experience during this tour. For additional information and details, contact Ralph Long at 8 Baldock Street, Ware, Herts SG 12 9 DZ or call him at Ware: (0920) 469485. Additional information may be printed in the future issues of the *Journal* as well.

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AUXILIARY

E X C H A N G E

Dedicated To Piano Technicians Guild Auxiliary News and Interests

You can only go ahead. Let me explain. As I am writing this month's column, I am staying with my son in the Chicagoland area. Remember those puppies? Well, I placed an ad in the Chicago Tribune and then came up here from Kentucky for three weeks to sell them. Today I placed my last little dog in the hands of a six-year-old little boy and just knew his Christmas was going to be a merry one.

But let's return to why you can't go back. I visited the old neighborhood and the old house where we lived for twenty years. It's just not the same. The new owners make changes and you wonder why you never thought of doing that to the house. The neighbors are glad to see you but they have new neighbors now and they need to move on. They are too busy to visit for hours and reminisce about the good ol' days.

I traveled down the loop in Chicago and everything there is changed: the one way streets, no cars on State Street, the new Library building. Many new buildings are added to the skyline that you remembered so well.

The old gang doesn't even meet every week anymore. People have

moved away, including us, and other are just too busy to keep the group together. Everything changes and you can't go back. You really need to concentrate on the future and what will be.

Since this is the beginning of a new year, we need to think about the future of the auxiliary. What do we want it to be? Where are we going with this group? What is the future of our organization. Remember, we can only go ahead, not back. We do not want to cover the same ground we have covered since 1958. Please think about this during these dark dreary days of winter and jot some notes down and send them to me. Maybe we cannot incorporate them all but we can think about some new direction for the auxiliary to take.

It is very nice to have memories but we cannot go back and live our lives over again; we can only go ahead. Remember, today is the first day of the rest of your life. And while you're at it, please have a very Happy Valentine's Day. Take that special Valentine out to dinner. Go on. Go ahead. See you next month.

Phyllis Krahmer Tremper
President

Attention!

*Spouses & Friends
of Technicians*

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PTGA Members Given "Capital" Treatment At North Carolina State Conference

The spouses of PTG members who attended the North Carolina State Conference held in Richmond, Virginia this past November, 1993, were given "capital" treatment throughout their stay. The Richmond PTG Auxiliary chapter planned a very special program for the weekend.

First on the agenda was a general historical overview tour of the area with a delightful driver/tour guide, Mrs. Jane James, who amazed us all by weaving in and out of that downtown traffic while keeping up a most interesting commentary on the sights! A walking tour of St. John's Church, where Patrick Henry delivered his famous... "give me liberty or give me death" speech, took us back in time as we tried to imagine what life must have been like during that period in history. After the church tour, it was time for lunch at the 2300 Club in historic Church Hill. Tours must make one hungry, because we all ate from our salad plates like we were starving!

The next day, we all met at 11:30 a.m. in the hotel to travel by bus

to the Swift Creek Mill Playhouse, a beautifully restored 16th century grist mill, for a matinee dinner theater performance of "Two By Two," a musical about Noah and his ark. What a charming location for a play. We enjoyed lunch first, even the southern spoon bread, which many of the ladies had never tasted before. The show followed our meal and was so good—the singers captured the spirit of the songs so well.

We purposely left some free time for our guests throughout the weekend so personal interests could be pursued. From the comments of the participants, our plans were a huge success. The Richmond Auxiliary members—Charlene Sheppe, Mabel Hiatt, Gerry Leach, Brenda Hallmark and Cathy Williams—would like to thank all of the spouses for coming to the conference and taking part in the activities. We sure enjoyed your visit to our city.

Brenda Hallmark
Richmond Chapter
Auxiliary President

Checklist For A Successful Business or Family

As a professional educator the patterns in life never cease to amaze me. Vocabularies need constant updating as applications are made to the current disciplines of interest. A more current buzz term is *positive climate*.

In a current course of study I came across this Phi Delta Kappa check list that would give a snapshot of your school's climate, but I felt it was readily transferable to either your business or family.

To take this picture of your business or family, rate each of the following items in accordance with the following code: 1—Strongly disagree; 2—Disagree; 3—Agree; 4—Strongly Agree. If your answers total 30 or more, consider yourself involved in a positive climate.

OUR BUSINESS OR FAMILY...

- 1) operates within a common set of guidelines
- 2) has personal properties that are acknowledged (i.e. my tools, my desk)
- 3) has good health
- 4) has high morale
- 5) has high achievement
- 6) has a sense of ownership and pride
- 7) trusts one another, cares about one another and respects one another a great deal
- 8) communicates well with one another and appreciates differences
- 9) frequently participates in problem-solving activities
- 10) operates in a non-threatening atmosphere (i.e. people are not afraid of disrespectful treatment, failure or physical harm)

I have enjoyed adapting this profile and would hope you found it a tool to help you "accentuate the positive" as this new year is getting under way.

Judy Rose White
PTGA Corresponding Secretary

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VIDEOS

PIANO TECHNOLOGY EDUCATIONAL materials. Vertical Piano Regulation by Doug Neal, \$115; Plate & Pinblock Installation by Cliff Geers (2 reel set), \$148; Wood Repairs by Cliff Geers, \$68. Soundboard repair by Cliff Geers, \$86; Grand hammer replacement by Cliff Geers, \$86. Add \$5 per order for shipping and handling. Questions? Call 712-277-2187. Mail orders to PTEM, 3133 Summit, Sioux City, IA 51104

WANTED

WANTED!! DEAD OR ALIVE: "Steinway uprights and grands." Call collect, Ben Knauer (818) 343-7744 **PREVIOUSLY OWNED** 9 foot American Steinway. Finders fee. Call collect Doug Markel, 209-957-1542

ANTIQUE AND MODERN European grand pianos, any condition. Swenson's Piano Shop, P.O. Box 634, Trumansburg, NY 14886-0634. 607-387-6650. FAX: 607-387-3905. (24 hours)

SEND RARE AND HISTORICAL pianos to the restoration experts. Handmade parts, open-and close-wound bass strings in brass, iron or copper. Edward Swenson, P.O. Box 634, Trumansburg, NY 14886-0634. 607-387-6650. FAX: 607-387-3905. (24 hours)

STEINWAY & MASON HAMLIN WANTED!! "Dead or alive." \$\$\$ Grands, uprights, consoles—any size, cabinet style or quantity. Cash and immediate removal. Finders fee for successful purchases. Call us first!! 800-438-3814 toll free or write to be listed in our worldwide data banks. Piano Wholesalers, 5817 Wickfield Drive, Parma Heights, OH 44130. Call us first!! 800-438-3814

Q-R-S PLAY-A-SAX Music Rolls. Made in 1928-31. Must be in good to excellent condition. Call Jami at 816-753-7747 between 9-5

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It is easy to become a display advertiser in the Piano Technicians Journal. Rates vary according to size of ad and frequency discounts that apply. To find out the details, contact Jami at 816-753-7747 or FAX your advertising information to 816-531-0070. Please allow six weeks from date of publication.

Advertise your service in the PT Journal classifieds. An inexpensive and effective way to get the word out!

Contact PTG Home Office by February 19 to be included in the April issue.

Send your classified ad to:
PTG Home Office, 3930 Washington, Kansas City, Missouri 64111.
OR FAX THE AD COPY TO:
816-531-0070

Include your check or Visa/Mastercard number, along with your name and daytime phone number.

PTG Marketing Tools Review

How Should I Take Care Of My Piano?

Written with the average piano owner in mind, this brochure covers such topics as problems and tuning needs. Basic rules of piano care are spelled out, along with advice to seek professional piano care from an RPT member of the Guild. This is an excellent brochure for individual clients and for bulk displays in piano stores and music studios.

How Often Should My Piano Be Serviced?

This brochure begins with a brief description of factors affecting maintenance frequency (climate swings, placement in the home, quality of manufacture), then presents quotes from ten piano manufacturers outlining their specific service recommendations. This is an essential tool when answering the perennial question, "How often should my piano be tuned?" The manufacturer quotes lend credibility to your advice.

The Special Care and Maintenance of the Teaching Piano

Proper maintenance is especially important to piano teachers who must provide their students with a responsive action and a musical tone to correct pitch. This brochure describes tuning needs, regulation and voicing as well as their relation to the student's ability to perform. An excellent business builder with teachers, it includes such topics as "What should my regular maintenance program consist of?", "How should I go about selecting a piano?" and "How do I find a qualified person to service my teaching piano?"

All brochures are \$150/500, \$35/100, \$20/50

Bulletin #1: Pitch Raising

This bulletin emphasizes the importance of keeping a piano tuned to A-440 for best sound and proper ear training. It explains how climate and neglect affect pitch and why the technician must perform a pitch raise before doing a fine tuning.

Bulletin #2: Regulation

Topics covered are "What is regulation and how does it affect my piano's performance?", "How often is regulation needed?", "What are the signs that my piano needs regulation?" and the difference between regulation and tuning and information on reconditioning and rebuilding. Space is included for your comments. This bulletin features a detailed diagram of a grand and vertical action.

Bulletin #3: Climate Control

Topics include, "How does humidity level affect my piano's tuning?" "What is relative humidity?" "What can be done to minimize humidity problems?" and "How will humidity control benefit my piano?" A chart is provided for recording relative humidity levels and pitch data. Together with an accurate hygrometer, this bulletin helps you in diagnosing climate-caused stability problems and recommending solutions. Clients receive educational material on the effects of climate as well as documentation of their specific problem.

Bulletin #4: Voicing

This edition describes voicing, explains the difference between tuning and voicing, what is good tone, how the technician voices a piano and also explains to the customer indications that their piano may need voicing.

Bulletin #5: Finish Care

This bulletin discusses common-sense finish care tips, as well as information on various types of products and piano finishes. It also includes a section on cleaning keys.

Bulletin #6: Rebuilding and Reconditioning

Bulletin #6 defines the terms rebuilding and reconditioning and how the two terms differ. It also explains "What happens to a piano as it ages?" "When does a piano need reconditioning or rebuilding?" "What work is included in rebuilding or reconditioning?" and goes on to confirm how to decide if major repairs are appropriate.

All technical bulletins are \$90/500, \$20/100, \$12/50

Place your order by phone by calling 816-753-7747 or use the convenient order form on the next page to place your order by fax: 816-531-0070 or by mail: 3930 Washington, Kansas City, MO 64111-2963. Visa and Mastercard accepted.

*Marketing Brochures
& Technical Bulletins
available to
RPTs and Associates*

*The six-page, stapled brochures are
2-color, printed on glossy-coated
paper, and measure
9" x 3 3/4".*

*Formats are consistent among all
brochures. The three brochures
intended for customers feature a
description of PTG and RPTs on the
final inside page.*

*The technical bulletins are written
for the customer who is considering a
particular maintenance option. They
provide detailed information on
specific topics in a question-and-
answer format. The attractive,
single-page documents are printed
on heavy ivory card stock in 2 colors,
punched for a three ring binder,
8 1/2 x 11.*

*These brochures and technical
bulletins educate the public about a
wide range of piano services and the
benefits of proper maintenance. They
promote PTG as a source of qualified
technicians, and their professional
appearance projects quality onto
your business. All products provide
a space for your business stamp or
label.*

a fax order from...

Name _____

Address _____

City, State, Zip _____

Daytime Phone _____

RPT or Associate Guild Member # _____

Visa _____ Mastercard _____

Account # _____ Expiration Date _____

For Office Use Only

Date Received _____

Method of Payment _____

Check # _____

*All publications now available
to both RPTs and Associates*

Item Description	Quantity	Price per unit	Total
How Should I Take Care of My Piano?			
How Often Should My Piano Be Serviced?			
The Special Care & Maintenance of the Teaching Piano			
Bulletin #1: Pitch Raising			
Bulletin #2: Regulation			
Bulletin #3: Climate Control			
Bulletin #4: Voicing			
Bulletin #5: Finish Care			
Bulletin #6: Rebuilding and Reconditioning			
Subtotal of cost of items			
Add \$2.00 per 100 count—shipping & handling			
Total cost of order			

Once you have completed this form, fax it to 816-531-0070, 24-hours-a-day—7-days-a-week

If faxing is not convenient for you, simply complete the form and mail it to:

Piano Technicians Guild Home Office

3930 Washington

Kansas City, MO 64111-2963

Piano Discussions™

February 1994

News From The World Of PianoDisc

PianoDisc techs ask: What's in store for '94?

PianoDisc's tech support division was very busy in 1993. Since January of last year we've beefed up our installation training courses, presented introductory seminars at local and national PTG gatherings, established special tech support hotlines, began issuing a regular technical bulletin, and hired a Quality Control director who, among other things, responds to technicians questions and suggestions about improving the PianoDisc system.

Of course, all you PianoDisc techs out there haven't exactly been sitting your hands, either. In the last year, you've installed thousands of systems nationwide, mostly on new or reconditioned classic pianos. And just about every piano technician we've talked to recently has run across one of the 10,000+ installed PianoDisc systems scattered across North America. All in all, '93 was a great year.

So what's in store for '94? Well, among other things, We'll be back at the annual PTG

convention in beautiful Kansas City with another introductory class on the PianoDisc system.

This class is open to all piano technicians, whether you've been through our Installation Training Seminar or not. In it, PianoDisc's Senior Installation Instructor Mark Burgett will explain the basic operation of the system, give some expertise on the tuning and regulation of pianos equipped with reproducing systems, and give valuable troubleshooting tips and diagnostic shortcuts. So, if you make it to Kansas City, stop by the PianoDisc booth for a chat!

New Classes. Also, 1994 will bring a secondary level of instruction to the PianoDisc technical training division. Remember earlier we mentioned that we're monitoring feedback from PianoDisc techs? Well, one suggestion—that we offer a continuation seminar for techs that want to learn even more about the PianoDisc—has been taken to heart.

Accordingly, we will announce dates for our series of PianoDisc Continuing Education seminars next month. Graduates of this continuation course will be able to repair or replace components in the field, install updated hardware and chips (as opposed to sending the parts back for replacement), and may be called upon to do difficult service calls—on us. So, if you're already a PianoDisc tech, start thinking about a return trip to Sacramento. It's lovely here in the spring! (Summer too!)

Of course, we'll continue with all the other tech support programs that we started last year, and we'll keep adding and improving on these as we go. And we'll continue listening to you for your comments and suggestions, so keep them coming!

So, from the bottom of our hearts—thanks for a great 1993, folks. And let's do more in '94!

Installation Spotlight - 1993



This Steinberg upright, dating from around 1905, resides in the Southern California home of movie actress **Geena Davis**. This piano was rebuilt, refinished in high polish and fitted with a PianoDisc system by **Franco Skilan** of **Precision Piano Services** in North Hollywood. Franco has done a few PianoDisc installations for celebrities, and we hope he does more in '94!

PianoDisc Installation Training

1994

- February 16-19
- March 16-19
- April 13-16
- May 11-14
- June 8-11
- August 10-13

Training is **free**, but a \$50.00 refundable deposit is required for confirmation.

For information about attending a PianoDisc Installation Training seminar, call PianoDisc at (916) 567-9999.

Our Address

PianoDisc
4111 North Freeway Blvd.
Sacramento, CA 95834

Telephone Numbers

Phone: (916) 567-9999

Fax: (916) 567-1941

Tech Support: (619) 258-1460
(510) 427-0411

Our telephone lines are open daily (except weekends and holidays) from 8 AM-12 Noon and 1-5 PM Pacific Time.

Tech Spotlight

This month our spotlight swings towards the Ozarks, to the stomping grounds of President Clinton and her husband Bill. That's right, Robert—we're talking about YOU!

Robert Turner is a tech in Arkansas who, it seems, devotes his time exclusively to Rush Limbaugh and PianoDisc, though not necessarily in that order. He is so adept at installing and servicing PianoDisc systems that we've sent him out on the road on a few occasions to work with installed systems or perform installations in remote areas. Robert even provides routine service to a system at a resort on the beautiful, tropical island of Barbados. Robert says it takes a whole week to service their system. Yea, right.

So, keep up the good work, Bob. And thanks!

Tech Gazette

Yamaha Service

February, 1994

Yamaha News

Attendees at the 1994 NAMM International Music Market in January, were both surprised and impressed with the many new pianos and new piano-related products displayed by Yamaha.

New A1 grand piano

The 4'10" A1 Yamaha grand piano sets new standards in sound quality and overall musical expressiveness for a small grand piano. This piano incorporates many of the features of the Yamaha G-Series pianos. The only thing small about this piano is its length.

New DA1 Mark II grand piano

Yamaha continues to augment its successful Disklavier™ piano line with the introduction of the DA1 Mark II, the Disklavier piano version of the 4'10" A1 grand piano. Even with its sleeker, more compact design, the DA1 still provides all the features of the Mark II operating system, like its larger cousins.

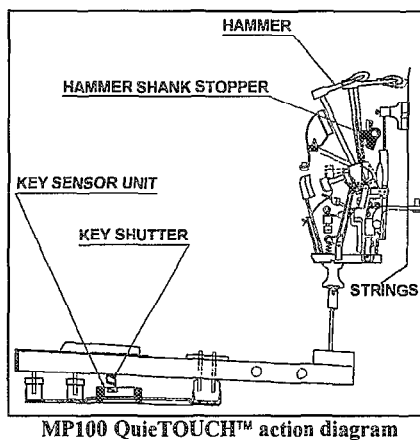
New MP100 piano with QuietTOUCH™ feature

The first of the MP100 Silent Series™ acoustic pianos with the QuietTOUCH™ feature was introduced in a U1F upright piano. For those times when the player needs to practice without disturbing others, the QuietTOUCH™ mode is activated by simply depressing the

middle pedal.

In the QuietTOUCH™ mode, a mechanism prevents the hammers from striking the strings, and optical sensors detect the velocity and duration of each keystroke (see diagram below). The notes are then produced by a Yamaha AWM sound chip, and the sampled sound of a Yamaha concert grand piano is heard through headphones in stereo.

The QuietTOUCH™ feature offers dual play capabilities, with two headphone jacks and up to 32-note polyphony, three reverberation modes with four reverb levels in each mode, and MIDI output. The MIDI output is also active during acoustic piano operation, making the Silent Series™ piano a fine MIDI controller keyboard. Now the piano player can have the best of both worlds—high quality acoustic piano sound, with the option of playing and practicing in complete privacy.



MP100 QuietTOUCH™ action diagram

New U1 and U3 pianos

The U1 and U3 pianos on display at the NAMM Show looked similar to their predecessors, but both the U1 and U3 have undergone several refinements resulting in increased tone color, overall sound, and dynamic range. In addition to modifications in back construction, the treble bridge has been lengthened, for a more delicate sound with better dynamic range in the treble section. These changes reflect the Yamaha hallmark of continuous improvement.

New S4 and S6 grand pianos

Prototypes of the Yamaha S4 and S6 grand pianos—designed for those desiring concert-level quality in a less than full-sized 9' grand piano—were on display at the NAMM Show.

The new S4 and S6 pianos, measuring 6'3" & 6'11" respectively, will be manufactured at the same facility that produces the Yamaha CFIIIS concert grand piano.

New M500 console pianos

The new M500 line of "super-console" pianos may become the most important piano introduction of the decade for Yamaha. At 44" high, these pianos are one inch taller than previous Yamaha console pianos, for a big, rich sound that matches their visual appeal.

More News next month...

PARTS & SERVICE: (800)854-1569

FAX: (714) 527-5782

PIANO TECHNICIANS **Journal** UPDATE

FOR MEMBERS OF THE PIANO TECHNICIANS GUILD, INC.

Richmond Chapter Ends First Year of SPELLS Promotions

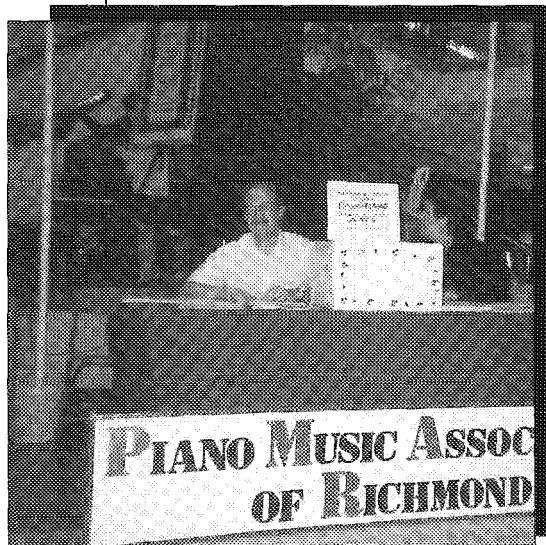
The Richmond Chapter and the Piano Music Association of Richmond brought to an end its first year of SPELLS promotions with the presentation of a check and a drawing of a new Samick console piano during the 1993 Children's Miracle Network Telethon. PMAR's donation of over \$1,200 was presented to CMN live on the local NBC TV affiliate by newly elected Richmond PTG Chapter president, Alan Hallmark, RPT

PMAR's second year of activities began in August with an appearance at the "Annual Cary Street Watermelon Festival." A stage with two Kawai grands provided the street crowd (estimated at 75,000) an opportunity to hear performances of piano solos, duets and quartets by piano students, teachers and professionals. While at the PMAR booth, the PTG the RMTA and PMAR dealer members were promoted along with sales of chances to win a new console piano during the 1994 CMN telethon drawing.

January of 1994 hosted our major promotional event of the year with the Second Annual "Longest Piano Recital." This event continues to draw much attention and public enthusiasm. Over 16 hours of piano music

filled an area mall for two days along with information on The Piano Technicians Guild, The Richmond Music Teachers Association and PMAR piano dealer members. Once again chances were available to win a console piano.

The third event of the year is to have an information booth at the Richmond Home Show in April. The PMAR booth will once again promote playing the piano



Jesse Williams, RPT and CMN Volunteer work the PMAR booth, January, 1993.

while helping to raise money to benefit the Children's Miracle Network. This event usually draws over 100,000 area residents and, we expect to raise most of our donations at this time.

*Alan Hallmark
Richmond Chapter President*

SPELLS:

Our Start In Richmond

The Richmond SPELLS Program came together shortly after Jesse Williams, a PTC member and piano store owner, read about the then new program in Music Trades Magazine. Thinking it would be a great idea for the Richmond area, Jesse decided to talk to the people at Richmond Piano and Jordan Kitts, whom he knew through the PTC. He went in and sat down with the sales staff and managers and talked about the idea of joining together to promote music and the piano. We discussed several ways to do promotions and felt that it would be wise to involve the piano teachers and technicians. The next week, Jesse met with the manager of Jordan Kitts, talked about the SPELLS program and they too were interested.

With three out of five stores interested, together we contacted the other two stores in person and through phone calls. Also, the president of the Richmond Music Teachers Association were called and invited to meet with us later. Everyone seemed excited and we all could see that there were benefits for everyone involved. Soon Baldwin Piano of Richmond agreed to join us, however the other store was not interested and would not even meet with us.

We called our first meeting. It was an early morning breakfast meeting at a centrally located Shoneys.

SPELLS from U1

After a hardy breakfast and casual conversation we got down to business. We talked about our goals, our responsibilities and the benefits. Some of the dealers had concerns about bias and promoting one store or brand over another. Piano teachers felt it would be great to provide accurate and positive information about lessons and piano playing to the general public. Piano Technicians were excited to be able to promote PTG tuners along with telling people about proper piano care.

So, as we came to a close that morning, we agreed that what we were trying to do would help our cause and agreed to meet again. With that, communication lines were opened up like never before and new friendships were forged. With additional meetings and hard work ahead, Richmond's Spells program was underway.

*Jesse Williams, RPT
Richmond Chapter*

Northern California Tuning & Technical Examinations

**March 29, 1994
Skyline College**

**Contact: Russell Brown
408-429-5453**

To all exam boards and testing committees: Get the word out! The *Journal* is an excellent source for publicizing upcoming exams in your area—and it's free! Place your testing dates and deadlines in the PTJ *Update*. Deadlines run approximately six weeks from date of publication (example: April issue deadline is February 19) so submit your exam dates as early as possible.

Southern California Area Exam Board

Working Successfully since 1988

The exams offered by the Piano Technicians Guild to Associate members wishing to upgrade to RPT status are handled in several different ways in various areas of the country. Some of the methods include exams given at conventions, those given at the chapter level, and those given by a few Area Exam Boards. This article will describe the Southern California Area Exam Board, which has been functioning successfully since 1988.

The Southern California Area Exam Board (SCAEB) gives all the technical and tuning exams for six large area chapters. The exam fees are deposited into the Exam Board account and fees are used to buy and maintain jigs and action models, support the extra cost of tools, and so on. None of the area chapters need to maintain exam jigs and models any longer, which had gotten to be a bit expensive and time-consuming, and rather than keep a sizable fleet of master tuned pianos around a very large geographic area, we only need to keep about four available and in good shape. Even the farthest-flung membership of the six chapters have only about a two-hour drive to the exam site, while large numbers are within 30-60 minutes' drive. The chapters seemed to be quite relieved to shift the burden to the Exam Board; none expressed any qualms about loss of control or loss of exam fee funds. Apparently, it was control and money very dearly bought when they had to give exams themselves!

The Exam Board uses California State Long Beach (CSULB) as its site. The school is centrally located, easy to find, has ample free weekend parking and nearby sandwich and pizza shops. There are enough rooms available to put technical exams in three

Kathy Smith, RPT • LA Chapter

rooms, tuning exams in two rooms and still have a room for "Exam Central" (i.e. coffee and relaxing between exams). The school owns six Yamaha C3D grands from 1981; four have been master-tuned and extra work is done occasionally to keep them in good shape. With the core group of five exam board members plus RPT helpers, we can (and have) run twelve technical and eight tuning exams in a weekend without stretching into extra rooms.

The SCAEB was initiated in the fall of 1987 when WRVP Jim Bryant organized a meeting of a group of people from several of Southern California's six chapters. Most people in the group had been active in administering tuning and technical exams at the chapter level. Over the course of several meetings, the group (starting from scratch) brainstormed, discussed and decided upon a definition of purpose, a set of five "positions" (jobs), and a set of bylaws. The positions of the five core people of the board are Chair, Chief Tuning Examiner, Chief Technical Examiner, Secretary/Treasurer and Site Manager. Job descriptions were clarified for all five positions. The bylaws included such items as a policy for handling exam fees, cancellation policies, and chapter representation. The Southern California Area Exam Board and its proposed bylaws were then offered to the six area chapters who would be serviced by the new exam board. Each chapter had several months in which to publicize the idea, discuss, approve and ratify the Board and its bylaws. Once the Board had the official support of the involved chapters, we began to offer training weekends and to give technical and tuning exams. A schedule of regular exam weekends soon evolved, which came in part from

"quiet" times at the university (namely January and June) while no school was in session. Other time have been used most years in March and August, which are also quiet times, for training sessions. At first we held "examinee training days" in March and "examiner training days" in August, until we felt comfortable with the number of trained RPT assistant examiners we had available. "Examinee training days" have continued. Associates can sign up for half-day sessions in tuning and/or technical areas. When groups are split up for their sessions, the teaching ratio is often about 7:1. These "tutoring" days have been very well received. Emphasis is not on just "learning how to pass the exam"; it is on learning good basic skills. However, one deliberate goal is to get Associates to see and become comfortable with the site, the examiners, the jigs, and so on. It serves no purpose for anyone to be intimidated by the non-exam parts of an exam day!

The SCAEB examiners have found a number of advantages to giving exams in this centralized way. Chapters, espe-

cially smaller ones, were happy to pool action models, jigs, and people, so that duplication of effort and cost was minimized. The exam board is a new entity which can (and has) become another resource for training and encouragement of Associates. And, very importantly, the exams given at the site are very consistent and up-to-date, which is often a problem between many different chapters. Examiners can keep up with the latest exam-giving information, keep their jigs in good shape (always a battle) and can remember from one exam to the next how and in what order everything is done! It helps that the Southern California chapters have an excellent combined newsletter in which to publicize all the events in advance. That helps boost Associate members to set goals and motivates their study. Still another advantage of the exam board setup is that examiners can be treated well, reducing frustration and burnout. Since the exam board is an entity with its own budget, it can (for example) afford to treat busy examiners to a nice lunch during a full day of exams, and even an occasional

dinner at the end of a long tiring day—when none of them want to go home and cook! the cost is minimal when compared to the prospect of training new personnel every year or two. The current core of board members and several main assistants have served consistently since 1988, lending deep experience and well-honed skills to the process of exam-giving for hundreds of members.

One possible problem is that things have been running so smoothly for several years that we soon need to go back to the chapters for some new assistant examiners; it seems sometimes like they've forgotten we're here. It is the responsibility of the board to keep communicating our needs to the chapters. We look forward to the new PACE program as it begins life in the chapters. SCAEB can both participate in and benefit from such features as increased training for Associates, improved pre-screening by local chapters and the mood of increased support for training.

Watch this space—there's more to come!

Dallas Chapter Honors One Of Its Finest

*Jack Wyatt
Chapter President*

There are those of us who do our share of the work. There are those who reap the benefits of the efforts of others, while doing little ourselves. There are those of us who do our share, but for self serving reasons. Then, there are those who, year after year, quietly and unselfishly do much more than our share. Such a person is Leon Speir. So to him, "In recognition of his outstanding service to the Piano Technicians Guild, the Awards Committee of the Dallas chapter proudly presents our first *Outstanding Member Award*."

Thom Tomko, of the Dallas Chapter Awards Committee, makes the special presentation to National PTG Vice President, Leon Speir, recognizing him for his many contributions on the local, regional and national levels of the organization.



Cincinnati Chapter

Novel Chapter Technical Meetings

The Cincinnati Chapter of the Piano Technicians Guild has embarked on a novel approach to chapter technical meetings. It consists of a series of four consecutive monthly sessions accompanying the regular chapter meetings. The Sound Course, as it is called, is designed to promote a scientific view of sound and energy propagation in the piano. The first session was for our October meeting and a mathematics professor was invited to give a lecture on trigonometric functions and vectors. This material was to be a prerequisite for the lectures to follow. One of the intended goals is to move our audience to a more sophisticated level of understanding that can only be reached by acquiring the knowledge of this first lecture.

The next two lectures will be given by a physicist on resonance and energy propagation in a string. Our physicist promises to give several exciting demonstrations along the way to prove his points such as an in class experiment showing wave interference. A shallow transparent pan of water is placed on an overhead projector along with two mechanical oscillators separated by a short distance that produce a constant wave pattern in the water. The overhead shows the interference pattern quite well by the reflec-

CHAPTER Snapshots

tion of the light and shadows of the waves as they move across the pan of water.

The final lecture by Michael Wathen will concern itself with applying the principles of the previous lectures specifically to the piano. We will explore how energy is transferred in a duplex scale. We will look at and attempt to understand how and why a string that moves in a vertical motion due to the impact of the hammer can end up having more motion in a horizontal plane. We will attempt to see what are the implications of this and how the rate of energy loss in a string is influenced by the other two strings of a three string unison.

One other note: the lectures are being video-taped and we hope to make copies available for sale sometime in the spring. Look for an advertisement in the *Journal*.

Richmond Chapter

1993 NCS Conference Largest Yet

The 12th annual North Carolina State Conference, co-hosted by the Pamlico and Richmond Chapters, was attended by two hundred people from 27 states representing 38 chapters of PTG. A well rounded program was

planned and coordinated by conference director Lewis Spivey, RPT. The four day extravaganza held at the Richmond, Omni Hotel November 11-14, 1993 included top level instructors and performers, representatives from the major manufacturers and suppliers, and two hard working host chapters making sure everything ran smoothly.

There were many excellent classes (thirty-five in all) on a wide variety of topics taught by twenty-five of the best instructors PTG has to offer. Piano manufactures represented by five area dealers included Baldwin, Falcone/Mason & Hamlin, Samick, Yamaha, and Young Chang. Exhibitors numbered twenty one, and they offered an abundance of the best items and services available to the professional piano technician. The auxiliary program arranged by Brenda Hallmark and the Richmond PTGA provided its twenty-two participants with a variety of experiences in and around Richmond. New this year was a reduced rate for dependents. This helped to make the conference a worthwhile and affordable event for the entire family!

Next year's conference plans are already underway—1994

Director Evelyn Smith, RPT and the Central N.C. chapter promises this to be an event you won't want to miss. So, mark your calendar for November 3-6, 1994 and join us at the High Point, N.C. Radisson Hotel for an outstanding educational opportunity that will enhance your professional being.

Louisville & Blue Grass Chapters

Team up for KTMA Convention

The Louisville and Blue Grass Chapters of Kentucky participated in the Kentucky Music Teachers Association state convention which was held October 10-12, 1993.

In addition to exhibiting a PTG booth, the chapters made a informational presentation to the students and teachers attending the convention.

KMTA First Vice-President, Dr. Janet Bass Smith, noted to Louisville Chapter member Matt Grossman, that the presentation had been very informative and well received by the audience and hoped that PTG would again participate in next year's convention, to be held in Ashland, Kentucky.