PIANO TECHNICIANS

Journal

January 1993

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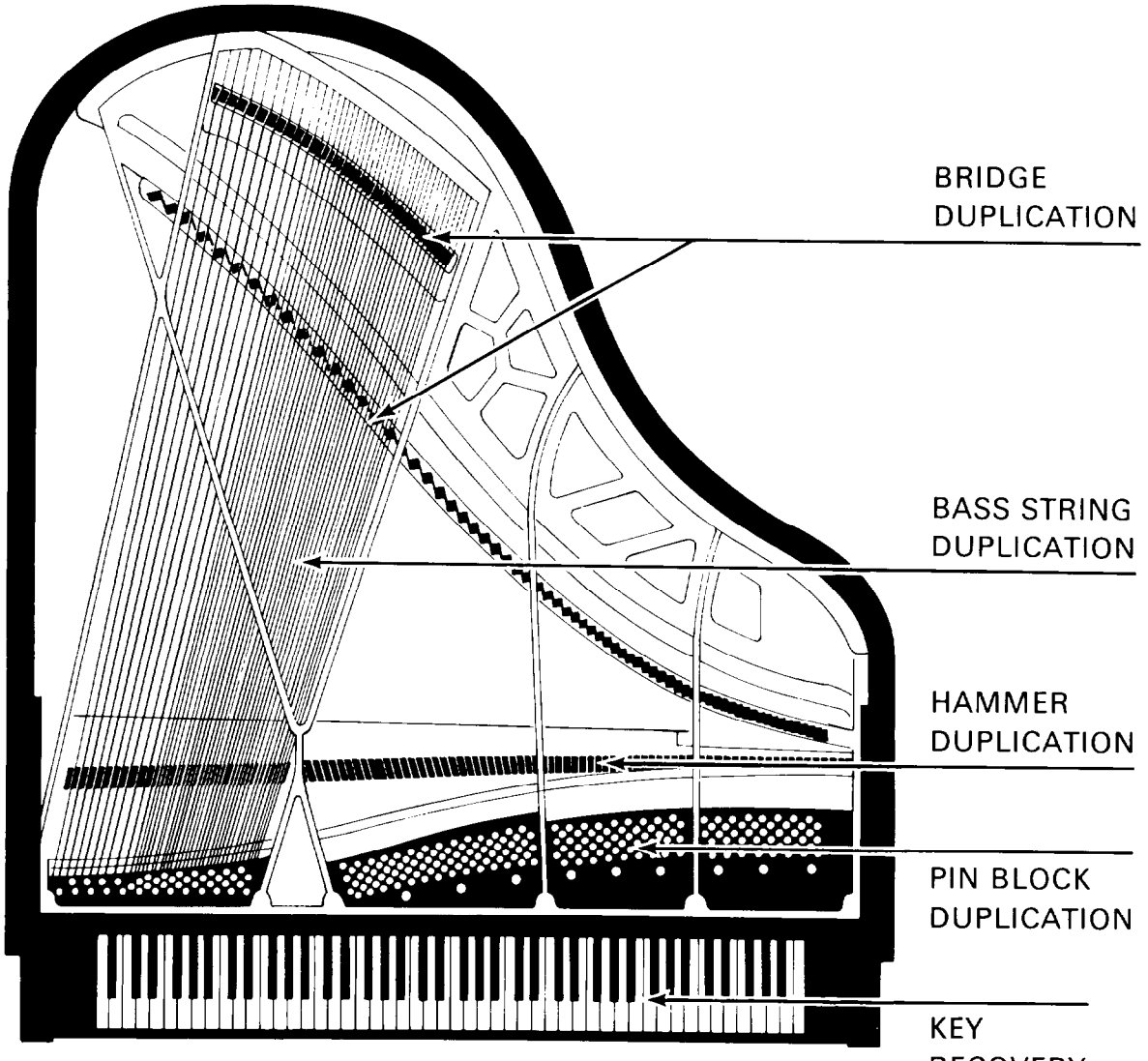

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PIANO TECHNICIANS JOURNAL

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ON THE COVER

The piano on this month's cover is an "Art-Case" Steinway Grand, Model A, 6', Serial #89810 built in 1897 for a family in New York City. The Steinway piano factory had an art department that would design very elaborate cases for customers. Some of these "one of a kind" instruments cost several times what a standard production piano of that size would cost. The style is Victorian Rococo which was popular in those days. The legs, pedal lyre, and cheeks of the piano are very ornately carved, the case was "gilt and painted decorated by A.G. Blackmore", according to Steinway records.

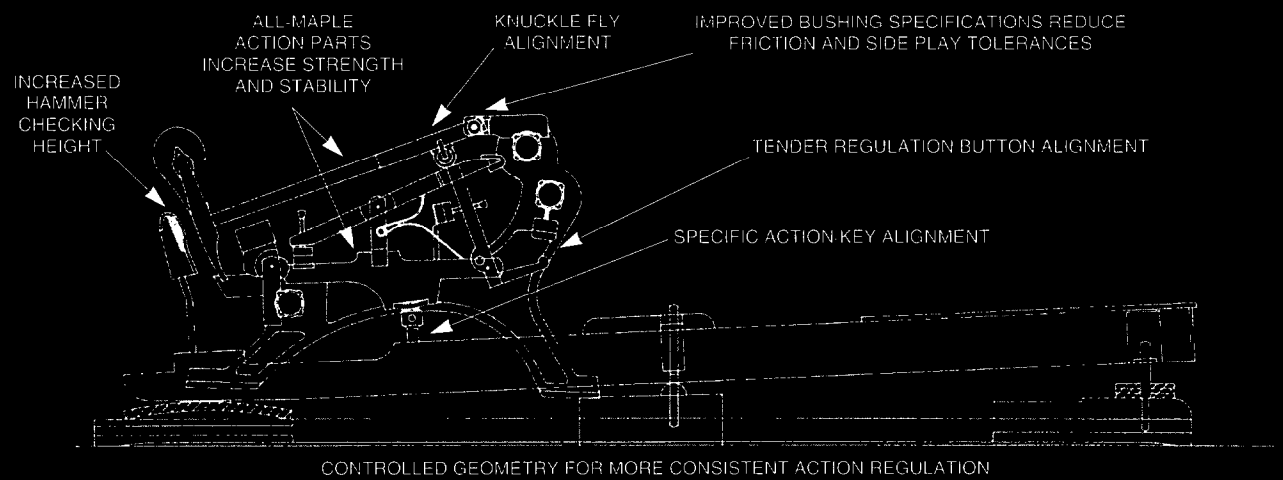
Restoration of the piano includes a new soundboard, bridge caps, pinblock, pins, strings, plate felts and damper felts. The original ivory key tops have been restored, which is removed, bleached, and reglued. All the keyframe felts are new and the action parts are new Steinway wippens, hammers, shanks and flanges. A new damper underlever board has been installed. All the trap work to the pedals has been removed, cleaned, lubricated, and new leather or buckskin replaced the old. The brass hardware has been cleaned, polished and lacquered.

This type of restoration assures that the instrument can be used as a modern piano, with the tone and feel of a piano of today.

Patrick L. Stone, RPT

STEINWAY

Action:



The Newly Refined Steinway Action

Reaction:

The accelerated action of a Steinway has long set a standard other pianos have been unable to equal. And at Steinway & Sons, we've spent the past 5 years finding ways to raise that standard even higher. The result is a newly refined Steinway action comprising 7 refinements, created on upgraded machinery at the Steinway Factory.

Concert artists have already had quite a reaction. After extensive evaluation during development and performing at venues from the Aspen Music Festival to the White House, they feel the new Steinway action enhances responsiveness to touch, and delivers even more power to the hammer throw.

And piano technicians will have a very positive reaction to a long list of features, including all-maple action parts; insured geometric position of key and action; tighter tolerances for friction and side play; higher hammer-checking capability; and even more latitude for regulation.

The new Steinway action will soon be found in all grand piano models S through D. And, importantly, the all-maple action will also be available for 1984-1992 models S, M, L, B and D, and for all models prior to 1984.

Specifications for regulation and adjustment are listed in the new Steinway & Sons Technical Reference Guide. To order your copy or to get complete information, please call Michael Mohr, Director of Service Administration, 1-800-366-1853 X3119.

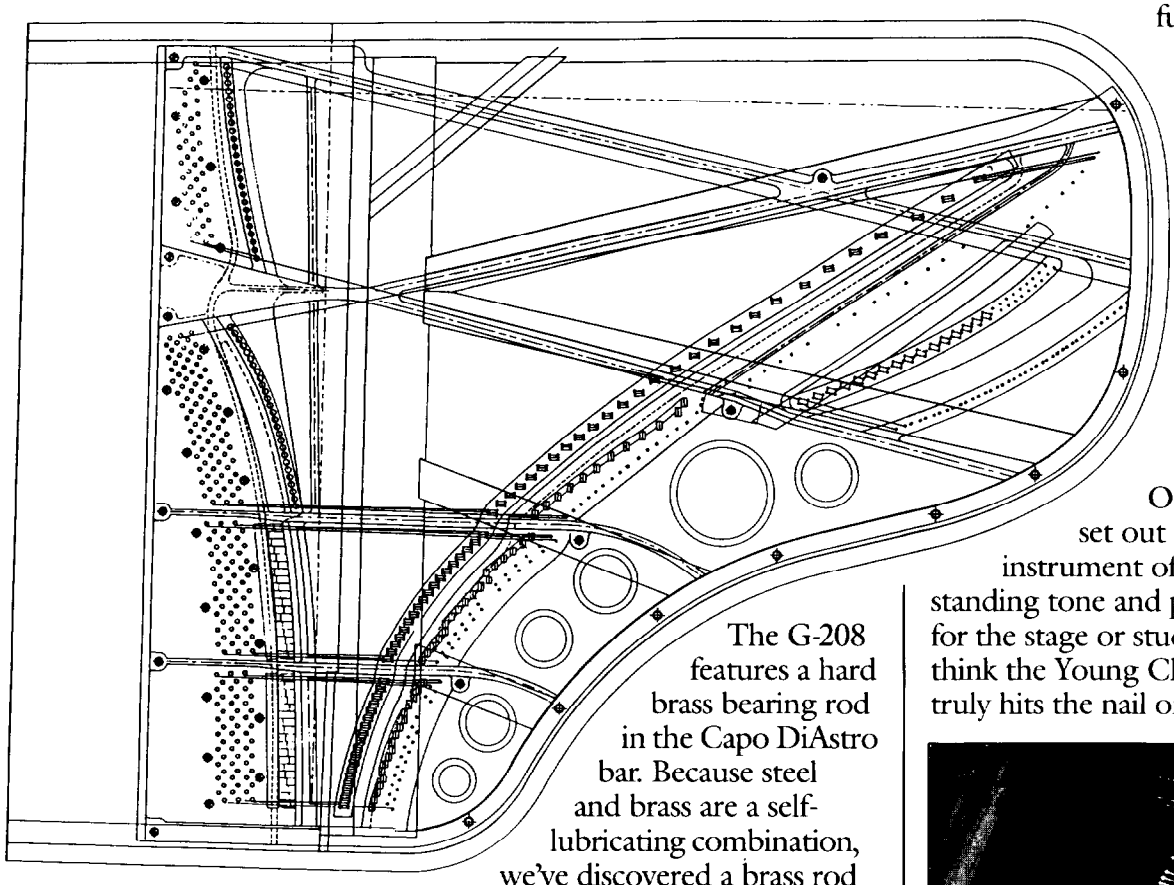
STEINWAY & SONS

One Steinway Place, Long Island City, New York 11105

A nuts and bolts guide to the new Young Chang G-208.

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 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.

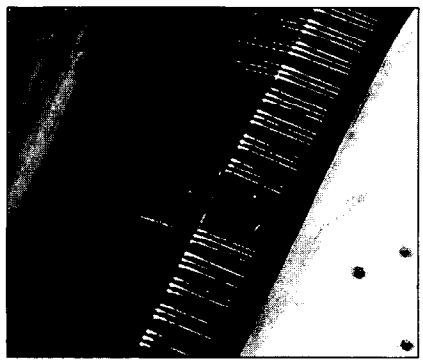


The G-208 features a hard brass bearing rod in the Capo DiAstro bar. Because steel and brass are a self-lubricating combination, we've discovered a brass rod offers better control of strings during tuning. In addition, the brass rod is easily replaced later in the life of the instrument eliminating the need for reshaping of the capo bar.

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 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. Our engineers set out to design an instrument offering outstanding tone and performance for the stage or studio. And we think the Young Chang G-208 truly hits the nail on the head.



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

For technical information on our new G-208 grand piano, write to us at Young Chang America, Inc., 13336 Alondra Blvd, Cerritos, CA 90701. Or call 310/926-3200, ext. 237.

YOUNG CHANG

The best the world has to offer.

President's Message

ACTIVE CHAPTERS

STRONG GUILD

Norman Neblett, charter member of PTG, cautioned me during my rookie year as WRVP never to forget the importance of the local chapter. Each member joins our organization through a chapter and each member's perception of PTG is influenced by his/her experiences there. The health and vitality of every chapter is of vital concern to us; for PTG to succeed in its Mission, chapters must succeed in meeting the needs of members and contributing to the local music community.

Fortunately, we have many success stories to tell. One of the delightful perks of serving as President is receiving chapter newsletters from far and wide. Here are a few fascinating stories gleaned recently:

• The Boston Chapter has embarked on a research project to gauge the accuracy of bass string winding from various sources.

• Joining with the children of Seattle, our chapter there has helped to raise funds to buy a new concert grand for their symphony. Technicians have tuned pianos pro bono for children's benefit recitals and a dozen chapter members worked to rebuild a vertical piano (in six weeks!) to donate for sale.

• In Richmond, Madison and Dallas, PTG chapters have spearheaded the formation of piano dealer networks, joining with the National Piano Foundation SPELLS program, which promotes the benefits of playing the piano.

• TV cameras were present at the Texas State Association hosted by the Dallas chapter last fall; CNN came with a camera crew and filmed for about two hours. The resulting three-minute tape was shown in early October; PTG members from Toronto to LA reported seeing it.

• Florida now has a statewide newsletter, designed to improve communication among the nine Florida PTG chapters and to strengthen the Florida State Seminar.

• Every PTG newsletter gives priority to describing the upcoming technical program for the chapter meeting. For example, the six Southern California chapters publish a combined newsletter; the class descriptions and reviews in it are an excellent source of programming ideas.

News and information like the above should be shared in our PTG media. That is why the newly formed Chapter Services Committee is asking you to call, write or at least send them your chapter newsletter! We want to serve chapters by providing a steady stream of fresh ideas and establishing a network for communication among chapters. The goal is to collect newsworthy items to print in the LeaderLetter, which goes to all chapter officers, and the *Journal* Update. If you share your chapter's creative ideas, you may inspire others; and in turn, you may pick up a suggestion that will be useful to you.

Below is a list of the committee personnel; each PTG region has at least one representative, larger regions have two. Consider these people as reporters: tell them your chapter's successes, stories and plans. We'd like to feature your chapter too!

Chapter Services Committee
1992-1993

Colette Collier, Chair
Bill Ballard, NE
Chuck Erbsmehl, NE
Bob Carr, SE
Alan Hallmark, SE
John Gould, SC
Bob Bussell, CE
Bob Russell, CE
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Or Contact:

Rick Baldassin
Teaching & Technical Consultant
70 S. Orchard Drive
N. Salt Lake, UT 84054

PHONE: (801) 292-4441
FAX: (801) 298-1441

Institute Update

KNOWLEDGE ON TAP • COME SEE WHAT'S BREWING IN '93!

The Hyatt Regency hotel will be the site of our PTG Annual Convention and Technical Institute. We will also be using the MECCA Convention Center across the street for exhibits and classrooms. The MECCA is attached to the hotel on the second floor by a covered skywalk. The accommodations at both locations are first class. We should enjoy a great convention in Milwaukee. The skywalk also connects to a large three story shopping mall, with plenty of fast food places and stores for your shopping pleasure. We are offering a full schedule of classes for your continuing education and you will be receiving some highlights of classes throughout the year. Each month we will also let you know of at least one restaurant or eating establishment, and one educational or entertainment accommodation within a four block area of the hotel.

You will receive a complete schedule of classes in plenty of time to make all your right choices as you prepare to be in Milwaukee for this convention to remember.

We used AA Airport Shuttle to get to the Hyatt for $6.50 each. There is auto parking next door to the hotel for $7.00 per day or the Auto Park at $3.00 per day, located at Wisconsin and Second Streets, two blocks away. The Marc Plaza is most convenient to the convention center through the skywalk by the shopping center. The teaching rooms will be on the first and second floors of the hotel and on the second floor of the MECCA convention center, all are easily accessible, and conveniently furnished.

One attraction right out the side door of the Hyatt and across Third Street is the Milwaukee County Historical Center and Museum that is very interesting. On the other corner is an Italian Bar/cafe where we had lunch. The food was good, reasonable and quick. There is also Toy's Chinese Cafe and a Korean Cafe right across from the hotel on Third Street.

In the Institute, Keith Bowman, Chairman of the Marketing Committee, will be showing you how to enhance your business by using PTG marketing material, and other means that do not cost a lot of bucks but bring in good rewards. He will have an exciting presentation of the new PTG Logo (assuming council accepts the logo proposal). Howard Jackson will present a class on Professional Key Recovering. Those that have seen this professional demonstration in the past are amazed at how easy it is to do such professional work. Jack Stebbins, our ETS Chairman, is teaching "Partial Hearing: Your Greatest Asset." This class is an eye opener. Come find out why you do what you do and how to do it more easily.

Fred Fornwalt is Private Tutoring Coordinator and is giving you the opportunity to enroll in one-on-one education to further your skills. Ray Chandler is Mini-Tech Coordinator and is putting together a good group of Mini classes in the MECCA center.

Well, that's it for this month. Remember, we want you to COME SEE WHAT'S BREWING IN MILWAUKEE IN '93!

Gary Neie, RPT
1993 Institute Director

A downtown Milwaukee landmark—City Hall—completed in 1895

Historic Milwaukee Offers Visitors Glimpses Into The Past...

By James and Linda Marten
Milwaukee Chapter

The Milwaukee Chapter of the PTG would like to invite technicians, spouses and everyone interested in piano technology to the 1993 Institute. We think you'll find Milwaukee an excellent convention site because of its accessibility, wealth of attractions and *Gemutlichkeit*—the German term for warmth and hospitality. Each month between now and July, you'll be hearing from us through *Journal* articles about what there is to see, do and eat in Milwaukee, along with some fascinating background about our historic and ethnically diverse city.

The past literally lies just below the surface in Milwaukee, Wisconsin. Humans have lived on this stretch of shore line of southern Lake Michigan for almost 9000 years. French traders and missionaries first "discovered" the Menomonee Indians' wild rice fields and fishing grounds in the swampy delta of the Milwaukee River in what is now downtown Milwaukee, and a British warship sailed into the harbor in the 1770s, but Solomon Juneau holds the title as city "founder." Establishing a trading post early in the 19th century, Juneau, whose name graces a major downtown street, preceded the Yankee land speculators who journeyed west in the 1830s and bought up the swampy bottom lands to sell to later settlers at exorbitant prices. Workers shoveling hundreds of tons of dirt transformed the swamps that had provided Native Americans with rice and fish for millenia into firm ground for businesses, taverns and homes. An ancient lifestyle was literally buried.

The early WASP land speculators rode the whirlwind of development in the 1830s—the Yankee Hill neighborhood just north of downtown provides a reminder of their presence—but a nation-wide depression ruined the real estate market and allowed steadier citizens with less speculative bents to move in. When Milwaukee became a city in 1846, her residents elected Solomon Juneau their first major; by 1852 the city enjoyed a population of 25,000, two-thirds of whom were foreign-born.

Much of the early population growth came from an influx of immigrants from Germany and Ireland. The Germans were generally highly skilled craftsmen or businessmen who settled on Milwaukee's "North Side" and gave the city its hard-working, clean-living reputation. The *Milwaukee Sentinel* reported years later that the Germans had taught the Yankees "some needed lessons in the art of cheerful and pleasurable living." The Irish, on the other hand, desperately escaping the potato famine and hard times on the Emerald Isle, had to take low-paying, unskilled jobs and lived in the city's first slum, the "Bloody Third Ward," south of the Milwaukee River. The Irish suffered one of the worst disasters in Milwaukee history, when two hundred Irish militiamen and their families returning from a military gathering in Chicago were drowned when the steamship, the Lady Elgin, went down in Lake Michigan in 1860. Tragedy struck the Third Ward again in 1892, when a fire ravaged much of the Irish community. Despite such catastrophes, these immigrants and their descendants dominated the politics and economy of Milwaukee for many years. The Irish became prominent in the Democratic Party and sent many Irish candidates to city, county, and state offices during the 19th century.

Other immigrants flowed into Milwaukee in the 19th and 20th centuries. Poles occupied the "South Side" and built great Catholic Churches like St. Stanislaus and the Basilica of St. Josephat, which still tower over the smokestack and church steeple-studded South Side skyline. Italians took over the decimated Third Ward and came to dominate the produce and grocery industries. As the

20th century progressed, the population of Milwaukee continued to diversify. Since World War II, Hispanics, African-Americans and Asian-Americans have crowded into neighborhoods once occupied by Germans and Poles.

By late in the 19th century, the leather tanneries, iron and steel foundries, flour mills and meat-packing plants dominated the economy of Milwaukee. Merchant ships from all over the world took on freight in the harbor on Lake Michigan, while Milwaukee Road freight trains loaded with Milwaukee products rumbled throughout the West. In addition, sixty-two passenger trains left Milwaukee every day in the 1880s.

Although all of these industries still play a role in the Milwaukee economy, the old-time industry for which Milwaukee is still famous is the production of beer. A Civil War-era tax on whiskey encouraged the brewing of beer. Although three Welshman had started the first Milwaukee brewery long before the war, by 1861 Germans dominated the trade and Melms beer was the most popular. Melms and his twenty-five competitors were soon overshadowed by a trio of German brewers—Jacob Best, John Braun, and August Krug—whose breweries later evolved into the giant Pabst, Blatz and Schlitz breweries. Eventually more dominant was the small brewing business sold in 1855 for $10,000 to an ambitious brewer named Frederick Miller. Pabst and Miller still headquarter their far-flung brewing empires in Milwaukee, and more than a dozen micro-breweries continue the Milwaukee legacy of entrepreneurship and fine brewing.

Other elements of the 19th and early 20th century past are still visible in the late 20th century. Irish and German Milwaukeeans fought together in the famed 6th Wisconsin Regiment during the Civil War; afterwards, the Soldiers' Home became the fourth such institution in the United States. Although it has evolved into a huge Veterans' Administration Hospital, the old building's Victorian turrets are still visible a few miles west of downtown near County Stadium. When visitors compliment Milwaukeeans for their clean streets and cleaner government, they are paying homage to one of the more unusual periods in American political history; for several decades after 1910, Socialists, led by Mayors Emil Seidel, Daniel Webster Hoan (who served for twenty-four years), and Frank Zeidler, governed Milwaukee. Milwaukee also sent Victor Berger, another Socialist, to Congress. One of the most prominent socialist politicians to come out of Milwaukee never ran for office in Washington. Goldie Mabowehz grew up in Milwaukee when her Jewish parents fled Russia; she helped her mother operate a tiny grocery store, joined the Labor Zionist Party, and attended Milwaukee Normal School (later absorbed by the University of

Wisconsin at Milwaukee). She became a librarian and married; in 1920 she and her husband moved to a chicken farm in Palestine. She became world famous as Golda Meir, the fiery prime minister of Israel. The library at UWM is named for her.

Milwaukee's past is reflected in her downtown architecture—the Pabst Mansion and Pabst Theater, the uniquely towered City Hall, the Mitchell Mansion (now the Wisconsin Club), and Marquette University's twin-spired Jesu Church, among many others. A series of summer lakefront festivals celebrate the music, food and culture of the Irish, Germans, Poles, Italians, Mexicans, Blacks, and Native Americans who have contributed to the city's rich ethnic diversity. Finally, her enviable reputation for responsible politics and concern for the quality of her citizens' lives is symbolized in the magnificent county park system, one of the finest in the United States. Milwaukee is one of the country's best-kept secrets.

Start making plans now for July 14-18, when you, too, can discover the past just beneath the surface of the present. You'll be glad you took advantage of the opportunity to see what's brewing in Milwaukee.

1993 Convention Offers Private Tutoring

Sign Up Early —Class Periods Available Are Limited

In today's competitive business climate success is achieved by those best able to meet the needs and exceed the expectations of the customer. The beginning of a new year offers the perfect opportunity to review the past and plan for the future. What better time to take stock of your technical and tuning skills along with the needs of your clientele. By planning now to attend the Technical Institute this July, in Milwaukee, you can take a very important step in assuring your own technical success. You may also take advantage of a very unique opportunity to design a class to your own specific requirements. Private Tutoring will once again be offered at this year's Technical Institute. You will be matched with an experienced instructor for an hour and a half to thoroughly examine and explore a topic of your choice.

There are only a limited number of class periods available—SIGN UP EARLY!

1 1/2 HOURS OF PRIVATE INSTRUCTION: $65.00 before June 18, 1993, $70.00 after June 18, 1993

Complete the registration form below and mail to:

Fred A. Fornwalt, RPT
1993 Tutoring Coordinator
1333 Logan Boulevard
Altoona, PA 16602

Or call for more information:
814-942-1489

name _____

address _____

city _____

state, zip _____

phone _____

number of sessions _____

topics _____

Technical Forum

The Right Way • The Wrong Way AND "MY" WAY

BY JIM HARVEY, RPT-EDITOR

Every technician had different reasons for entering this profession. Whatever the reasons, we each also had a method of learning the skills required to service pianos. The method may have been that of a correspondence course, time spent at a community college or private school, working in a piano factory, or perhaps serving an apprenticeship to another technician. I would imagine that some technicians gained an education using the school of hard knocks method. We often change our methods of performing a certain job from those originally taught us, on the basis of new processes we learn at seminars and conventions. Many times I have been tempted to go back and redo existing work, only because I learned a method of making the end results better.

Some technicians, however, either do not aspire to better their work, or if they do, somehow miss the mark. Sometimes we forget the original method, whether it was ever improved or not. At other times, we are confronted with situations in which we have little knowledge or expertise. Too often, when we are adamant about forging ahead (the art of bungling through), this ends up making a piano worse off than before the work was done, in spite of good intentions.

My early education in piano technology began with a correspondence course. This was while I was still a road musician, and prior to becoming a member of The Piano Technicians Guild. The pace of the course wasn't fast enough for my purposes, so I started hitting the libraries and reading everything I could get my hands on that had to do with piano work. At a point, I abandoned the road life, and settled down on the west coast. Now I had an opportunity to follow the advice of the books, and locate a "klunker" on which to practice tuning, repairs, and regulation.

I visited a large dealership, and while following the store owner to the "back room," explained my reason for wanting a piano in very bad condition. After all, I had read that the more problems that existed with the piano, the better educational tool it would be. I looked over the myriad of junk that was available. Junk is the appropriate word here. There were pianos that had high-water marks on the cases and soundboards, having been through floods. There were hybrids. These were the few-of-a-kind instruments (at least I hope so), that featured strange gadgets or peripheral attachments that served no known function for playing the piano. Now that I think of it, some things never change. I finally made a selection and started the price negotiations. It was then that I realized that this dealer's prices were based on greed rather than need. There was no way I could justify the price he was asking. Strange as it seemed, as I started to walk out in frustration, he offered me a job!

Thus began my tenure as a "line" technician, one who was armed with lots of "book-learning," but very few applied piano skills. The shop foreman, a non-Guild person, but one whose opinions I learned to respect, taught me some procedures using the "trial by fire" method. I'll never forget the first experience. While he was bench regulating a grand action, with his back turned to me, he said "Jim, we need to work on that Acrosonic today. Why don't you go ahead and pull the action?" Being mechanically inclined, I realized that this could be done. After all, that action got in there somehow. I further realized that I had to be very careful, lest all those pickup fingers drop out of their respective positions on the guide rail. Everything was going along slowly, but nicely, when you guessed it! One of the fingers dropped out of position on the treble side. While trying to prevent that one from getting broken, several more on the bass side fell out! While still holding onto the action, I looked around at the foreman, in a silent plea for help. He was not looking my way. Instead, he was adjusting capstans. However, his shoulders were shaking, a clear indicator that he was quietly laughing at me. He knew this would happen! He could have told me a better way of approaching the job, but perhaps I wouldn't have remembered it. Besides, it wouldn't have been nearly as much fun for him. Needless to say, I now know better ways of removing an Acrosonic action. After months of establishing a friendship with the shop foreman, and his having taught me a lot of worthwhile information, he finally left the job in frustration. I then became shop foreman, and I too ultimately left with the same frustrations, some of which I'll share.

Please do not consider any of these statements as being a blanket opinion about the scruples of all piano dealers. In fact, I sometimes wonder what would have happened had I turned right instead of left that day when I left my apartment in pursuit of a practice piano. Oh well. It was at this dealership, or more specifically from the dealer himself, that I learned the wrong ways of doing things. I "learned" that if the piano is really bad, and not worthy of rebuilding, paint it white and someone will buy it.

I "learned" that if the hammers did not have enough felt remaining on them to permit regulation, simply jack up the keyframe gliders. I "learned" that if the pinblock is bad, and if a little pinblock dope didn't cure loose tuning pins, that several bottles of it wouldn't likely work either. This one I learned following my refusal to "dope" a pinblock one Saturday afternoon. The following Monday morning, the entire store reeked of pinblock juice. I followed the odor to the same piano I'd refused to dope on Saturday, to find (1) the liquid all over the keybed and running down on the floor; (2) three empty bottles of pinblock dope sitting beside the piano; and (3) no increase in tuning pin torque. Incidentally, continued refusal to do certain jobs ultimately led to my departure from this company, but ironically, it was *my* choice.

In the meantime, my "learning" curve continued, either by watching someone else perform certain procedures or being coerced to do some of them myself, all the while knowing the procedures were improper. Initially, I observed and suggested. But after coming very close to getting into a fight a couple of times, I felt it prudent to simply observe. So I observed while subcontracted technicians pulled plates from pianos the hard way. The plate perimeter bolts were removed, but the pinblock screws were not, and the pinblock was still doweled into the rim! It was not a pretty sight. During rebuilding, I've seen black paint applied to bridges, right on top of (and instead of) graphite. After noticing a peculiar color being used for understring cloth, I once asked a worker about his choice of material. He proudly informed me that it was felt (note the word felt instead of cloth, and that cloth should have been used here) from a yardage shop, because the catalog stuff was too expensive!

In 1974, I became a member of PTG, and was able to share some of my frustrations with a fellow member. Knowing that I was not ready to declare myself an independent technician, he gave me two pearls of wisdom: (1) as long as I *knew* the difference between right and wrong methods, I was on the right track and would be okay in the long run, and (2) in spite of the difficulties, I should stick with the job as long as possible for the learning experience. After all, it *is* unusual for a technician to have 800-plus pianos on hand at any one time on which to learn.

After leaving this job, I tried to reverse all the wrong things I had done or had witnessed being done to pianos. As a result, I became a screw-polisher. Time and maturity have caused me to arrive at a balance between these extremes: in short, I still polish screws, but I've quit polishing the threads.

Merely declaring myself an independent technician didn't permit an escape from the wrong ways. Once I was called by another piano shop to "fix" a piano. The case had been refinished, and actually looked quite nice. The problem was that the piano didn't play. It seems that as part of the entire "rebuilding" of the instrument, all new parts had been installed. On closer examination, I noticed that the keyslip was off and that the action was protruding part-way out of the cavity. I pulled the action the rest of the way out, and noticed that there were indeed all-new parts. The new backchecks were bent back at a peculiar angle, to make room for the new hammers, which were glued onto new shanks, and resting on new wippens. Unfortunately, the new shanks were never cut. They were the same length as they were in the box, with the hammers glued onto the ends of the shanks. The hammer tails were still square, and... Suffice to say, you can imagine the daisy-chain of events this created.

I was hired to tune a piano early on a Saturday. These happen to be three things that aren't insurmountable individually. But cumulatively, I find *tuning, early,* and *Saturday* distasteful. However, this was for a well-known artist, and I was doing the job as a special favor for him. I arrived at the studio and began tuning without the benefit of a cup of coffee. I had just finished laying the bearings (an expression just for Charlie Huether) on the center strings, when a member of the band showed up. He said, in a very matter of fact manner, "You're gonna have to leave now." No amount of reasoning on my part would convince him that this was not really what he wanted me to do, so I pressed the damper pedal, and pulled out my temperament strip. I hate to think what that recording session sounded like. This is an example of the wrong way and "my" way, all rolled into one.

Perhaps I become frustrated over the logic of accomplishing certain tasks, even though I understand the intent behind the logic. For instance, I was contracted to repair a problem on a piano that was only six-months old. As part of correcting the problem (damper-related I think), I pulled the action, and in doing so, I noticed that the entire keybed was slick with graphite. No doubt a previous technician was attempting to eliminate a squeak. Never mind that another lubricant would have served better. My problem with this was why the technician had messed up the entire keybed, when the action only contacted the keybed at the front rail, balance rail glide bolts, and back rail. Apparently the client had a problem with this repair too, and I was the one who was stuck trying to explain why all that black stuff was in there. Is this a case of the right way, the wrong way, or "my" way?

Next, a letter that just came to the top of the stack, having been transferred from Susan Graham's files.

My purpose for writing concerns the jack top profile and the profile of the repetition lever's window of the grand wippen. The back corner of the top of the jack is, of course, rounded, but the top itself seems to be some kind of arc which starts lower at the back of the jack, [and] rising slightly as it goes toward the front (the jack tender side). (See **Figure 1, frame 1**).

What I have found is that in the process of smoothing the top with 400 grit sandpaper, and inadvertently changing the slope of the jack top, very slightly increasing the rise from back to front (by maybe 1/2 degree), there is a dramatic change in the resistance during let-off. Here are sample numbers from a job done recently:

All values are down-weight through let-off

	Dynamic	Static
Note C16		
before	65 grams	160 grams
after	56 grams	65 grams
Note A13		
before	73 grams	155 grams
after	66 grams	150 grams

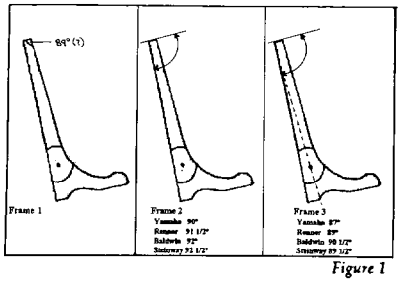

Figure 1

Down-weight through let-off dynamically means that the weight is placed on the key while keeping the key up with a finger, then letting go, the weight being sufficient to carry the key through let-off. Down-weight through let-off statically means that the key is depressed to let-off as is done when down-weight is normally measured, but then weights are added until [the] key can be carried through let-off.

Note C16 had its jack top inadvertently changed as described above, while note A13's jack top was more prudently done and its slope was not changed.

My question is what should the jack top profile be? By the way, C16's jack did not have to be adjusted any differently to avoid cheating. It seems also that when the jack is in an after let-off position, its profile matches the window's profile. Maybe it is an involute.

Vincent Mrykalo, RPT
Memphis Chapter

A couple of explanations are in order. First, the word "involute." According to Webster, this means "a curve traced by any point of a tense string when it is unwound from a given curve," or; "involved, rolled inward from the edges." Second, note that Vincent is not necessarily endorsing this procedure, rather presenting one of many "what-if" questions that occur to us during the process of

normal piano reconditioning. However, even in the theoretical sense, it may be used to emphasize the theme of this month's column. Suppose that Vincent were actually doing this to every piano he encountered, as a self-styled modification? It would then qualify as a "my" way for Vincent.

My first response, even in the hypothetical sense, would be to leave original action design, or modifications thereof, to the manufacturer. A portion of my reasoning is not immediately obvious. I'm often asked to help troubleshoot, and do so based on "textbook" examples.

A moment of digression please. "Textbook" above actually refers to my few remaining brain cells that are not yet deceased. Assume there is a given problem with a piano. Further assume that there are only five causes for this problem. I used to rapid-fire all five causes to a fellow technician, only to hear the response, "Well, I did all that. What's next?" Consciously I was aware that if all five causes had been explored and eliminated, there would no longer be a problem. Furthermore, if the technician had actually explored these five items, why was I getting a phone call? This happened quite a few times, until I began to review the causes from item one. This time, however, I would ask the technician to elaborate on each process: either the cause or the fix. As a result of the cross-examination, something inevitably fell through the cracks somewhere around cause number three. Since then, I only mention one cause at a time, followed by dialogue; that way I don't run out of ammunition quite as fast!

Digression finished. In several cases, it was later determined that something had been modified on the piano *after* manufacture. This really throws a wrench into the diagnostics process, especially when trying to do the diagnostics over the telephone!

Two instances immediately come to mind, involving pianos from two different manufacturers. The reason these are easily remembered is that in each case I was unable to help the technician. One involved difficulty in tuning, and a high-pitched after-ring. For space purposes, I will not go into the rundown of the diagnostics, but later I was informed that the dealer had removed the stringing braid from behind the bridges in an attempt to create a duplex section. This "feature" was never intended to be on this particular piano.

The second instance concerns an annoying buzz, another hard-to-find problem over the telephone. The cause of the buzz was ultimately discovered by the technician: there was a humidity gauge packed in the piano. Again, an undocumented feature that was not a textbook case.

Back to our jack angle situation. I talked to Bill Spurlock (remember him?) about this, and without identifying Vincent as the writer, mentioned the contents of the letter. Having one of those engineering-type heads, I figured Bill would get into

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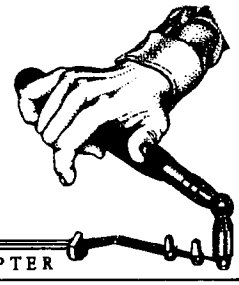

The Perfect Unison

MUSICAL TECHNICAL PROFESSIONAL

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this. I wasn't disappointed. The following are his comments on the subject.

Here are measurements I made on four jacks: (Refer to **Figure 1, frames 2 and 3.** Frame two shows the angle of the jack top to the back edge of the jack. Frame 3 indicates the angle of the jack top to a line between the jack corner and the jack centerpin).

As you can see, there is no consistency. The following points come to my mind:

• *The motion between the jack and knuckle depends upon many things, like the relative locations of the hammershank and jack centers, location of jack centerpin (this one varied on all four jacks I looked at relative to the jack width), knuckle-to-shank center distance, knuckle diameter, and angle of jack top, as well as just about every other aspect of the geometry of a particular action. Every maker has their own design; no doubt their particular jack top was designed according to similar principles and varies from others according to the rest of their action. Obviously it is questionable to look at one single aspect of action design and make conclusions without considering the action as a whole.*

• *It is clear that the gun trigger feeling of resistance at let-off would be lessened by sloping the jack lower at the rear. True, there are some pianos on which this feeling of resistance is more prominent than on others, and possibly these could be made to feel more "normal" by altering jack top angle, but is there an overall need to reduce this resistance? How have pianos been played all these years if this resistance is detrimental? Actually, it is a part of the touch that pianists use for feedback to achieve control.*

• *I suspect that one criterion of jack top angle is that it be square enough (not too much higher at the front) so it will not want to skip out on a hard blow. The designers probably build in a healthy safety factor here, and one possible danger in angling it more might be a tendency for the jack to skip out early; no down-weight measurements would ever detect this. Another criterion is probably knuckle wear.*

• *The writer's reference to jack top angle affecting touchweight really puzzled me. I can see no way that this angle can really affect down-weight measurements unless it were ground to a point so it would dig into the knuckle. In fact, I took very careful measurements on my Yamaha action model, then put a small piece of foam between the jack stop button and spoon to hold the jack completely away from the knuckle and re-measured. The down-weight measured exactly the same, even though the jack was not even in the picture. Likewise, with the repetition lever propped down out of the way so the knuckle was resting entirely on the jack top, the down-weight remained exactly the same. Finally, I changed the jack top angle from the original 90 degrees to 92 degrees and repeated measurements of down-weight as above, again with no change.*

The width of the jack top is so small compared to the knuckle diameter and the size of the arcs involved, that it

would be hard to angle it enough to affect basic down-weight measurement without having the jack just skip out on its own on a hard blow. And, as I found above, any affect could only be measured if the repetition lever was set low or its spring very weak, so the knuckle was resting entirely on the jack. Even then I doubt if any effect could be measured; I've found that jack position can be varied over an extreme range with no affect on down-weight measurement. Things that do affect action friction and hence down-weight measurements are knuckle contamination or lubricants and jack top roughness, both of which have to be controlled in order to make meaningful measurements when experimenting.

• *Could some actions play better if they had their jack tops altered? Possibly, but we should make sure that the problem is not just poor knuckle leather, lack of lubrication, poor regulation, or over weight hammers. We should also give first priority to the basics: walk up to 99 out of 100 pianos and what do we find they need most rescaling? Different action geometry? Tuning based upon pages of numbers? I think that what they really need, and what will give the player the most value for their dollar, is more frequent tuning, regulation touch-up, voicing, etc. The same is true of rebuilding jobs. Too often we see rebuilders attend to their own pet modifications while neglecting to really finish the piano off and follow up with adequate tuning, follow-up regulation, etc.*

Well, now you know what I think!

Amen on that last point, and thanks Bill, for taking the time to determine these angles, and for your opinions. I'm confident that each of you could add your own stories and views under the right, wrong, and "my" way headings. No doubt some would be as unnerving as mine. So, what is the reason for all these mostly negative examples? The answer, while simple, is also paradoxical. If we are of the mind-set to learn correct methods of piano work, then the resources are there for such learning. If certain methods are known to be incorrect, or even harmful, then why do these methods continue to be used? I submit that when in doubt, we should swallow our pride and utilize the resources we already have within our organization. Finally, before any attempts are made at the third method, the "my (your) way" method, it is strongly suggested that we become well-versed in the first (in practice and intellectually) and second (at least intellectually) methods. Otherwise, we are doing nothing but harm to either ourselves, our businesses, the instruments entrusted to our care, or to our profession. **Happy New Year, y'all!**

...Taking Care of Business

• The level of participation you have shown toward the Journal this past year is appreciated. Many have submitted articles for publication, and on some very interesting and diverse subjects. However, please remember that our magazine, like all others, is prepared ahead of when it is published and released. This is mentioned simply to ask for your cooperation. It is rarely possible to get an article, do the necessary preparations to same, and have it hit the streets by the next issue. In truth, I'm trying to build a backlog of articles, to permit presenting certain subjects during certain times of the year. This may be easier said than done. Meanwhile, I will continue to acknowledge receipt of articles, but please be patient as to when your material ultimately gets presented.

• Material for the Forum is needed. Questions, tips, or other information that is not lengthy enough to constitute a self-contained article are welcomed. Even idea "seeds" help, with or without supporting words, as they provide a takeoff point for the column.

• Please submit your typed or legibly written material for publication. If typed, please use single spacing, instead of the more traditional double-spaced method. The best medium of exchange, providing you are so equipped, is an IBM-compatible diskette. If on a Macintosh platform, please route your work through the home office, with a note that it is intended for the editor. Don't worry about the size of the diskette, the word processor used, or any special formatting. Whatever the medium of exchange, please advise if your material is not intended for publication. There have been a couple of close calls in this area, and I don't wish to embarrass anyone. J

Tuner's Corner

Comparing Interval Beat Speeds Intuitively

Daniel L. Bowman, RPT
Contributing Editor
Richmond Chapter

When a text book, Journal *article or PTG lecturer tells us that a certain interval should beat "a little faster" or "a little slower" than some other specified interval, the question is: How much faster or slower does he/she mean? Every effort is made by lecturers and writers to fill this gap with explanations such as, "The upper third in a pair of contiguous major thirds should beat faster than the lower one in a ratio of 5 to 4." Or, "The major tenth should beat half a beat per second faster than the major third." But that is still not the same as actually hearing the comparison. In other words, there is still no substitute for a one-on-one teacher to show you, "This interval is supposed to beat this much faster than that one." However, a lot of beginning tuners do not have access to such a teacher. The next best approach would be to find a piano freshly tuned by a good tuner and study those interval beat speeds. This too is hard to find when needed. Probably, for beginning tuners in much of small town America, the best place to find good temperaments and octaves on which to study comparative beat speeds is the inexpensive electronic keyboard. Some electric organs will do. These keyboards and some electric organs have their tunings (including a good equal temperament) imbedded in a computer chip and so are permanently accurate and equal.*

Find a keyboard or electric organ in which you can find a very brassy, even raucous sound, a sound in which the interval beating is obvious and stark. Never mind if it sounds ugly and cheap. Just make sure it has equal temperament and lots of high partials. You can determine whether the temperament is equal by noting whether all the beating intervals graduate evenly up and down the scale. If you are using an electric organ, make sure it does not have stretched octaves. The octaves are not stretched if the major third, major tenth, major seventeenth, all sharing the same root note, beat at exactly the same speed. Avoid sounds that have built-in room acoustics, reverberation, detuned or "phased" unisons, vibrato, etc.

Ideally, set up the keyboard at a piano where you can work on a temperament, but don't think for an instant of transferring a temperament directly to the piano by tuning the piano note by note from the keyboard (other than to see for yourself that it doesn't work). Piano inharmonicity is why this does not work. Also, don't try to transfer interval beat speeds directly from the keyboard to the piano. You will find the beat speed of a particular interval on most pianos (when finally gotten in tune) a bit slower or faster than that same interval on the keyboard. What we are studying on the keyboard, that may be informative when tuning a piano, is comparative beat speeds; that is, the study of the beat speed of one interval in relation to that of another interval. In other words, we are trying to answer this question: When the instructor or book says that interval *X* must beat a little faster or a little slower than interval *Y*, how much faster or slower does he/she mean?

As you play around with the keyboard you may, or hopefully will, begin to notice the "dead" character of the keyboard's tone compared to that of the piano, particularly in connection with its fifth interval and octave. This is because the keyboard is not inharmonic whereas the piano is. If you fail to grasp this difference, you are headed for difficulty when tuning pianos. Thus, along with commenting on comparative beat speeds, I will be pushing into some discussion of inharmonicity. Take it easy now; you *will* have to think, but no higher math and space age calculators are required in this article.

Study the interval comparisons listed below. The interval comparisons listed are the typical comparisons used for setting temperaments and octaves. I won't be saying much about a particular tuning sequence for setting a temperament. Just try to get an intuitive feel for the beat speed comparisons of the different intervals, drop them into your own bag of temperament tricks, and use or develop your own tuning sequence.

1. Increments of Increase and Decrease

First, get a feel for the rates of increase and decrease in beat speeds of thirds, tenths, seventeenths, fourths, fifths, sixths, minor thirds, etc., as you play chromatically up and down the keyboard. Notice there are no uneven jumps as you come out of either end of any supposed temperament octave. Also, notice that you can much more quickly make comparisons with the fast beating intervals such as thirds and sixths than with the slow beating ones such as fourths and fifths.

Recall some of your favorite interval comparisons and see how they compare on the keyboard. Also recall some of the problem spots in

your temperament and check those comparisons on the keyboard.

2. The Contiguous Major Third (4-to-5 ratio)

Contiguous major thirds are major thirds that share a common middle note, such as F_3A_3-$A_3C\#_4$. These are very useful in temperament work. Notice that the lower interval beats approximately four times in the same time that the upper interval beats five times. Compare the beating of F_3A_3 third with that of $A_3C\#_4$. Count "one-two-three-four, one-two-three-four" in time with the beating of F_3A_3 and tap your foot at each count of "one." In other words, one foot tap per four beats. Then play $A_3C\#_4$ while continuing to tap your foot at the same rate. Notice that the beats are now coming at the rate of 5 per foot tap. Now, start tapping your foot every four beats of $A_3C\#_4$. Then while continuing the tapping at the same rate, play $C\#_4$-F_4. The beating at $C\#_4$-F_4 will be at the rate of five per foot tap. If the beating of these intervals is too fast for you to count and compare readily, drop to a lower set of intervals, say an octave lower and try again.

All that counting and foot tapping may seem formidable to the beginner, but hang in there. The contiguous major third is a most useful tuning tool or test. Get the feel of how a series of three contiguous major thirds bisects an octave. You will likely catch on quickly if you can compare such a series on a poorly tuned piano with that on the rigorously perfect keyboard.

The first five notes of my temperament are (in order) A_4, A_3, F_3, $C\#_4$, F_4. Notice that this creates a series of four contiguous major thirds spaced *evenly* over a major tenth interval. Each of these notes can then serve as a root or base from which to tune one or several next notes of the temperament. Some technicians tune two octaves of contiguous major thirds, A_2 through A_4. Of course, the upper thirds are beating too fast to actually count and compare 4-to-5. You don't actually count; you just develop an intuitive "feel" that the beat speeds are evenly spaced in the series. This feel comes with practice. Don't give up. Keep listening to the keyboard's contiguous major thirds and keep trying to reproduce that relationship on the piano.

3. "Outside Sixth, Inside Third" Comparison

You can think of this as the seventh chord with the seventh note on the bottom as in the chord $F_3G_3B_3D_4$. The outside sixth beats at almost the same speed as the inside third. For example, the F_3D_4 sixth beats the same as the third G_3B_3, and the sixth $G\#_3F_4$ beats the same as $A\#_3D_4$. The significance of this observation is that if you have the notes F_3, D_4, and G_3 where you want them, you can then tune the B_3 from the G_3 such that G_3B_3 beats the same as F_3D_4. Getting this relationship right in your tuning is important because, on a well-scaled piano, the synchronized beating of the outside sixth and inside third in the seventh chord adds a definite character to the music.

4. The Fourth and its Tests

The test for the fourth interval is the major third major sixth test. For example, the test for A_3D_4 calls for the F_3D_4 sixth to beat a little faster than the third F_3A_3. Get the feel for this comparison from the keyboard. On a well-tuned piano, this difference may be a little larger than that on the keyboard. This is because of piano inharmonicity. It is a curiosity to me that a piano's fourth interval, which considered by itself is beating too fast, is nonetheless not problematic in the musical fabric of the instrument. In other words, perfectly tuned, or rather, perfectly tempered fourth intervals are not a top priority for my temperament nit-picking.

5. The Fifth and its Tests

Older tuning text books recommend the minor third major third test for fifth intervals. This test for the fifth G_3D_4 would be $G_3A\#_3$ beating a bit faster than $A\#_3D_4$. More recent texts and teachers, in the light of better understandings of piano inharmonicity, insist correctly that the preferred test for the piano's fifth is the major tenth major sixth test. For the G_3D_4 fifth, that would be the tenth $A\#_2D_4$ beating a little slower than the sixth $A\#_2G_3$. Get the feel for these comparisons on the keyboard. Then read on.

For the sake of brevity, I will refer to the minor third major third test as the 6-4 test and to the major tenth major sixth test as the 3-2 test. A fifth interval created by the 6-4 test or 3-2 test will be called a 6-4 fifth or 3-2 fifth respectively. If you understand coordinate partials, you will know the significance of this terminology.

Here is where we start running into the problems of piano inharmonicity. When tuning an electronic keyboard or other instrument without inharmonicity, either the 6-4 test or the 3-2 test for the fifth interval can serve perfectly well. Both tests would yield the same results. That is, both would agree in reporting that the fifth is just, or a little too wide, or too narrow, etc. Not so for the piano! When checking a piano's fifth interval, the 6-4 test may well report the fifth to be narrow of just while the 3-2 test reports the same fifth to be wide of just.

To understand this problem of inharmonicity, we need to push into the subject of coordinate partials. A musical sound is made up of a series of partial tones, the fundamental and its upper harmonics. In the piano world we usually refer to these partial tones simply as "partials," the fundamental being the first partial. When two notes are sounded together in a musical interval, various partials of the lower note line up with or match certain partials of the upper note. In a fifth interval, the third partial of the lower note matches the second partial of the upper note; the 6th partial of the lower matches the 4th partial of the upper, etc. In a major third, the 5th partial of the lower note matches the 4th partial of the upper; the 10th partial of the lower matches the 8th partial of the upper. In an octave, the second partial of the lower note matches the first partial of the upper note; the 4th partial of the lower

matches the second partial of the upper; the 6th partial of the lower matches the third partial of the upper; the 8th partial of the lower matches the 4th partial of the upper, etc. The term "coordinate partials" refers to these pairs of partials from different notes that match or converge on the same pitch. When the interval is slightly detuned as required for equal temperament, we hear the "beating" phenomenon at each pair of coordinate partials. For example, listen to the fifth D_3-A_3 on the keyboard. If your keyboard is sufficiently noisy in the high partials, you will hear at least two sets of beats. One set will be beating at the 3-2 coordinate partial (at the note A_4). It will be beating at a rate of 1 beat per 2 seconds. There will be another set of beats at the 6-4 level (at the note A_5), beating at twice the rate of the lower set of beats. (If you listen to this on the piano, the upper set will be beating at some rate other than twice the lower set.) There will be other sets of beats, still faster and higher in the partial series as long as the partials remain in the range of audibility.

As already noted above, either the 3-2 test or the 6-4 test may be used to check or create a fifth interval on a scale that is not inharmonic, such as your electronic keyboard.

The only difference between these two tests is that the 3-2 test reports the condition of the fifth, its flatness or sharpness at the level of the 3-2 coordinate partial, while the 6-4 test reports the flatness or sharpness of the same fifth at the 6-4 level. But this is precisely the difference that becomes critical when piano inharmonicity is introduced into the picture. As a result of inharmonicity, typically, the upper partial of any piano note are sharp of the *theoretically correct* whole number multiple of the fundamental, and the higher you go in the partial series of any one note, the more sharp, typically, go the partials. The 6th partial of the lower note of the fifth interval is typically more sharp in relation to its fundamental than is the third partial. Therefore, creating a fifth interval by relating the upper note to the lower note's 6th partial will create a wider fifth interval than achieved by relating the upper note to the lower note's third partial. The 6-4 test is the vehicle for relating the upper note to the lower note's 6th partial and the 3-2 test is the vehicle for relating the upper note to the lower note's third partial. Thus, it can be seen that the 6-4 test typically creates a wider fifth interval than the 3-2 test.

Now we are at the point where it can be seen why I have gotten so deeply into partials and inharmonicity, when the starting subject was simply learning to compare beat speeds intuitively. Actually, there are three good reasons. The first has to do with understanding the behavior of the piano's fifth interval; the second with the piano's octave. I will save the third for the conclusion to this article.

The first reason is that the fifth interval is a problematic interval in the tuning of piano temperaments, more so than on other instruments. Understanding the cause helps cope with it. The temperament won't fall into place. A certain fifth interval is suspected as the culprit, but the traditional 6-4 test reports the fifth to be okay. If you try the 3-2 test and re-tune accordingly, things will likely fall into place. The 6-4 test makes the fifth too wide. Another source of confusion in tuning piano fifth intervals is listening and tuning at the 3-2 coordinate partial while using the 6-4 test. The tuner can hear plainly that the fifth is still wide of just, but the 6-4 test insists that the fifth is very narrow. This dilemma was a hair pulling affair for me years ago before getting into the early *Journal* articles about inharmonicity. Use of the 3-2 test resolves that contradiction. Another pitfall occurs when the 6-4 partials are beating so prominently that the tuner's attention is drawn there rather than to the 3-2 partials where he/she should be tuning. Again the temperament won't work out because the fifth is too wide. The 3-2 test re-focuses attention to the right

place. The 3-2 test is the test of choice for the fifth interval on the piano.

This cranky character of the piano's fifth combined with its slow rate of beating is a powerful argument for using temperament sequences that emphasize the fast beating intervals (thirds and sixths) rather than the slow ones (fourths and fifths). Knowing the circle of fourths and fifths is essential for understanding music theory but that circle does not make a good tuning sequence. Piano inharmonicity is the reason.

6. The Octave and its Tests

The various tests for the octave are well known. The three most commonly used tests are major sixth minor third, major tenth major thirds, and major seventeenth major tenth. These tests relate the two notes of the octave at the 6-3, 4-2, and 2-1 partials respectively and are often called the 6-3 test, 4-2 test, and 2-1 test respectively.

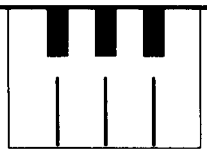
When we come to the octave, the usefulness of the electronic keyboard as a teaching device for piano tuning almost ends, other than as a study of contrasts. For example, the keyboard cannot show you how much slower the minor third should beat than the major sixth in the 6-3 octave test. Nor can it show you, in the case of the 4-2 octave test, what is meant by the words, "The major tenth should beat half a beat per second faster then the major third." The keyboard's octaves are strikingly *dead*, totally beatless, and all the various octave tests show a perfectly just octave, that is, perfectly matched at each of the coordinate partials. If you have the chance to tune an instrument like this, you will (or should) notice that all of the different sets of beats occurring at the various coordinate partials come to rest simultaneously as the octave goes into tune. Not so with the piano, and herein we come full face with the problem that sets pianos decisively apart from other instruments. Inharmonicity makes itself felt in dealing with the fifth interval, but emerges in full force with the octave. The various coordinate partials of the piano's octave cannot all be matched up at the same time. When tuning a piano's octave, say F_3-F_4, just about the time you get the main set of beats quieted down, one or two more sets of beats emerge, challenging you to quiet them as well. If you chase either of those beats, the first re-emerges, practically laughing at you. On some pianos this problem is mild, perceptible only when you know what to look for. On others, it is blatantly obvious. One rather good self-taught tuner once told me that this problem on a well-known American built studio piano "got me so mad that I wanted to run around to the end of the piano and kick it!" It is entirely typical that the 2-1 test may report the octave to be wide, while the 4-2 test reports it to be just, and at the same time the 6-3 test insists that the octave is narrow. Actually it is incorrect to say that a particular test reports the state of the entire octave; it only reports conditions at a particular set of coordinate partials. Coming at it from another direction, the various tests for the octave produce, on the piano, octaves of varying degrees of expansion and contraction by focusing on different coordinate partials. For example, an octave tuned by relating the two notes at the 6-3 coordinate partials (done via the 6-3 test) is wider than an octave tuned by relating the two notes at the 2-1 partials. This is because of the same problem with sharp upper partials discussed above in connection with the fifth interval. Central to the art of tuning a piano is knowing where in the piano's scale these different types of octaves belong.

Conclusion

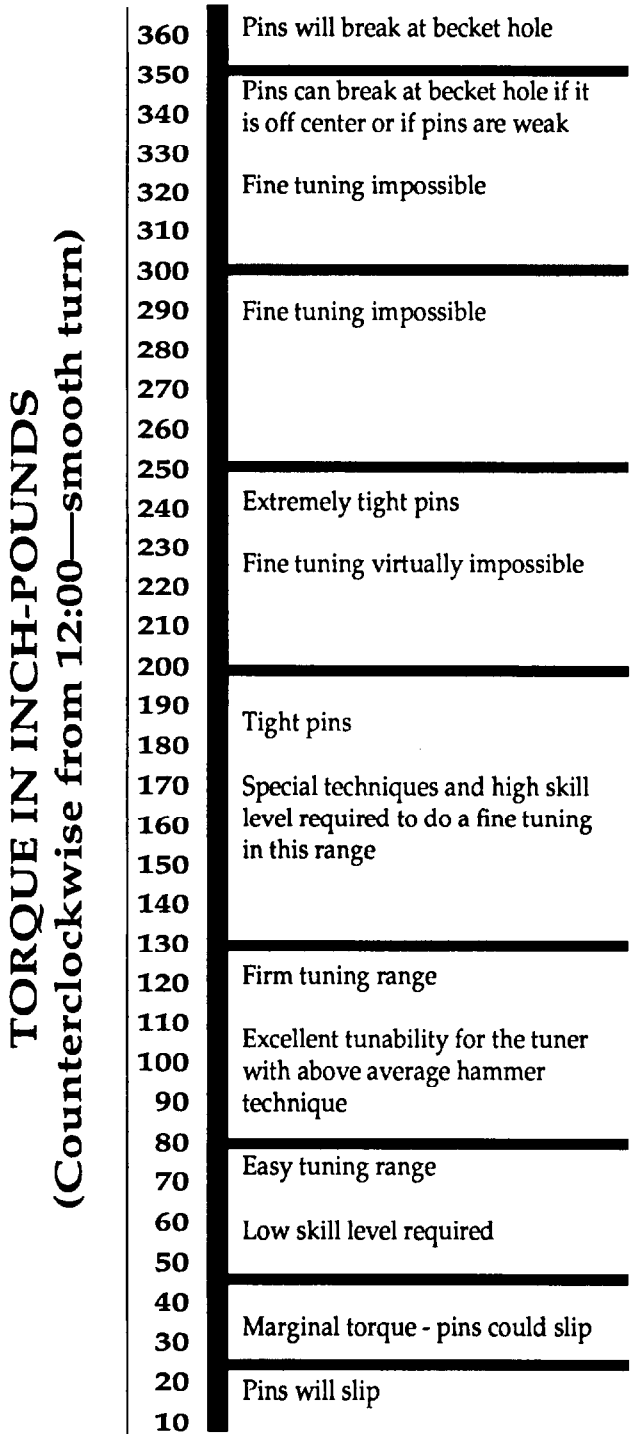
Now for the third reason for the digression into coordinate partials and inharmonicity. I have been suggesting in this article that the inexpensive electronic keyboard can serve as a useful tool in developing the aural piano tuner's intuitive ear for

comparing beat speeds. There is in this suggestion potential for a pitfall and occasion for insight. The pitfall would be failure to see the radical difference between the keyboard and the piano. That could take you right back to the early days of electronic piano tuning. The discussion of coordinate partials and inharmonicity hopefully will not only prevent that but also steer you toward the insight. The insight would be comprehension of how the piano is different from the keyboard and other non-inharmonic instruments, and why the rules for its tuning are different. This insight will also land you on one, if not *the* most important feature of the piano's tone—its inharmonicity. The keyboard can get you into the ball park, but you then have to learn to play by the piano's own rules. And it won't take much imagination to see an entirely different set of problems looming ahead when you are asked to tune a piano for a performance with an organ or other non-inharmonic fixed-pitch instrument.

J



Good Vibrations



More On....

Tuning Pin Torque & Tuning That Too-Tight Pin

Nick Gravagne, RPT
Contributing Editor
New Mexico Chapter

When tuning pin torque is consistent, and is neither too high nor too low, hassle-free tuning will follow. But what makes for consistent pin torque? Previous articles have explained the importance of pinblock material selection, appropriate bit size for drilling holes, and proper drilling techniques. We have not yet discussed the tuning pin itself, or its relation to the pinblock and string.

The Elastic Pin

The tuning pin is simply a steel rod; and being steel it has, like music wire, great elasticity. Anything elastic, such as a rubber band, has inherent in its molecular makeup the ability to return immediately to its relaxed (non-strained) position after an applied force has been removed. The applied force may be a bending force, a stretching force, or a twisting (torsional) force. Someone standing on the end of a diving board will cause the bore to deflect downward. After that person has cannonballed into the pool the diving board will spring up beyond its relaxed position, then down below it, then above it, in a sort of vibration. This movement eventually will stop, leaving the diving board in its normal, stationary position. A diving board is quite elastic. Water, too, is elastic. The huge splash of the cannon-baller will cause ripples, waves, and "vibrations" that will subside, leaving the water once again relaxed and undisturbed. But let us return to our little friend the tuning pin.

The opposite of elasticity is plasticity. Steel is elastic, but lead is plastic. If you stretch lead it won't spring back, it remains deformed. If you stretch or bend steel too far it, too, will not return to its original position, but remain deformed. Regarding tuning pins, a common misconception is that they are more plastic than elastic; that when a twisting force is applied in one direction (but not enough to turn the pin in the wood), a twisting force in the opposite direction is required to return the pin to its original position. But the fact is that, due to the great elasticity of steel, no twisting force in the opposite direction is required at all. The pin will right itself to its original position unaided. In fact, like the diving board, the tuning pin will over-correct itself, and also experience an instantaneous rotational "vibration," finally coming to a halt at its starting point.

Imagine a tuning pin anchored in a piece of cast iron such that it cannot rotate. If the exposed part of the pin is twisted, and then the twisting force removed the pin will immediately return to its original position (plus or minus tiny parts). But if the pin is twisted so far that it deforms, it will not return all the way to its at-rest position. Typical tuning pin torque values in working pianos are *not*, or should not be, high enough to cause the pins to deform (to be plastic). Hence, in the piano, tuning pins are springy, both in rotation and in bending. These facts should work to the tuner's advantage. But "wait" you say; "when I'm tuning a piano and I twist the pin enough to cause beats, but not enough to feel the pin move in the block, the beats will remain until I 'untwist' them away." Ah! There's a reason for that, and we'll discuss it later.

The Unforgiving Multi-laminate Pinblock

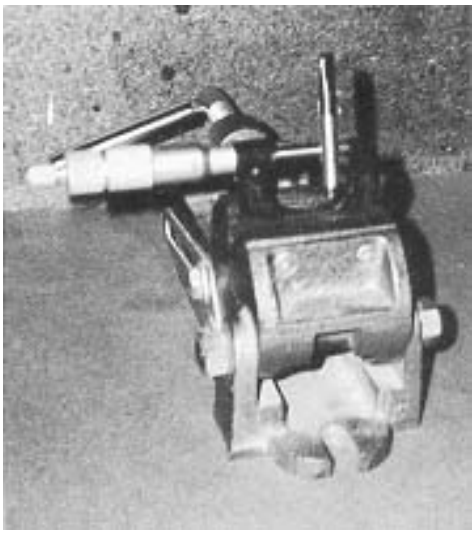
Even if you took great pains in drilling the dense multi-laminate pinblock (such as Falconwood), you still could end up with some inconsistent pin torque. This has more to do with the varying sizes of the pins than with the condition of the hole. Take the ordinary and most commonly used tuning pin, the 2/0 by 2 3/8 inch nickel plated pin. The diameter of the 2/0 pin should read 0.282 inch, but as most of us know, variations of plus or minus 0.002 inch are common. Often the variation can be found in a single pin, the tip area being "wider" than the upper shank section. And it matters not whether the pins are American made or Japanese made. Now this tiny variation may seem like very little, and so it is when such pins are used in less dense blocks than Falconwood. But in the high quality dense pinblocks a 0.002 inch difference in pin diameter can readily be felt by the piano stringer, and by the piano tuner to a sometimes distressing degree. Add to this that treble pins, due to the shorter dimension of the string coil, are usually driven deeper into the block than tenor and low bass pins that have larger coils.

Some of us are groaning "yuck, what crummy pins." But, unless I am grossly misinformed here, available tuning pins are more or less made of the same sort of steel, and processed more or less the same way. This is to say that tuning pins from all makers are more the same than they are different. The threads on nickel plated pins are usually cut after plating to insure full sharp threads; then they are cooked in the bluing ovens to remove any trace of the cutting lubricant. Finally the threads are blued. At any rate, my experience in having used every sort of available pin cannot induce me to recommend one manufacturer over another. If you are unsure, or interested in making a switch, ask around.

Remember, though, that any talk of inconsistent pins is usually related to the dense multi-laminate block. On the other hand, the Steinway blocks and the Bolduc 5-ply blocks are more forgiving of tuning pin inconsistency and errors in drilling. Of course, the correct bit size must be used.

Miking Pins

If you are one of the many fans of Falconwood-type blocks, you might consider miking an entire box of pins before using them. Sounds crazy, I know. But if you do it right the job goes along very quickly, and the results are worth the effort. First of all, miking the pins does *not* mean turning the micrometer spindle in and out for each pin in order to make a precise reading. That would be crazy. Rather set the mike to read 0.282 inch and lock it in; secure the mike in a small vise (see photo). In industry such a gauge is called a "go, no-go" gauge,



and it is designed to be a fast-use quality control gauge. For our purposes, grab a handful of tuning pins and one by one place them in the opening of the gauge. Some pins will drop right through, others will have to be slightly coaxed through, while yet others will not pass through at all. Test the pins at their tips as well as higher on the shank. As you go, segregate the pins into three boxes labeled "loose", "snug", and "tight". Use the loose pins in the higher treble sections, the snug in the mid treble-tenor, and the tight in the low tenor-bass. If all the pins seem snug or tight, your mike setting is too close regardless of what it reads. Reset until you can get three categories of loose, "normal," and tight pins.

Tuning the "Too-tight" Pin

For a variety of reasons, some new pianos, or rebuilt pianos, or repinned pianos, end up with very tight pins. Yet, we as piano tuners are called

upon to fine tune these instruments. What is the "too-tight" pin? Exact agreement among our ranks is impossible; but a consensus of parameters is possible. The accompanying Tuning Pin Tightness Chart, (page 24) which I cannot remember the where or when of having acquired, represents at least a point of departure for discussion. Notice that at around 180 to 200 inch pounds tuning pins are considered very tight requiring "special techniques and a high skill level" in order to do a fine tuning. What are these skills?

Many of us remember when the Yamaha piano was beginning to make giant inroads across the musical merchandising landscape. It turns out, and in part by farsighted management design, that independent piano tuners were among Yamaha's best salespeople. Why? Because these tuners were finding the Yamaha piano tonally clean and easy to tune. The pins "clicked" easily and uniformly, and strings responded to pin movement. But some of these tuners, who could fine-tune Yamahas all day, could not tune some other makes, either old or new, very well at all. The piano was often blamed as the culprit — pins too tight, too rusty, counter bearing at capo bar too severe, understring "adhesion" to string waste lengths too strong, and so on. Now these complaints are not to be minimized, but often the tuner's inability to solidly tune was based on improper handling of the pin/string/plate/bridge system. Let us for the moment confine the discussion to the too-tight pin.

A Long Ago, Pre-Lunch Revelation

I can remember as a neophyte tuner many encounters with tight pins. I had been taught, as most of us were, to pull the pitch of the note above the target pitch, while making sure to feel the pin move in the pinblock, then backing or pushing the pin in the reverse direction while delivering firm blows to the key. When the target pitch was achieved the "pin was set"; a "test blow" followed, and a solid tuning was had. Now in general this was, and is, all true. That is, as long as the pin tightness tests out in the range of, say, 70 to 120 inch-pounds.

Anyway, I can't forget wrestling with a tight grand piano in a store many years ago. It went like this. In order for me to feel the pin move even a tiny amount I had to pull the string WAY above the target pitch. When the pin finally moved, usually with a snap and jerk, the string was quite sharp. Now it was necessary to lower the pitch by pushing it way down, pounding the key, feeling the pin move, only to end up too flat. The process had to be repeated endlessly until, with the right combination of up and down, snap and jerk, I lucked into the target pitch. My "clever" way around this was to first lower the pitch a considerable amount so that my first up-pull wouldn't raise the pitch too far beyond where I wanted it. But notice what I was locked into — that in order to tune solidly, in fact, in order to tune *at all*, you *must* feel the pin move in the block. It always worked with Yamahas, it was supposed to work with all pianos. Really.

Now standing by watching me suffer through the months was an older (40 if a day), experienced tuner of well-deserved repute. On this particular day we had a date for lunch. He looked at how far along I was in the "tuning," looked at his watch in a manner that George Bush is wont to do, made a quick calculation in his head, and came over to consult. "Excuse me, Nick, how much longer do you think you're going to be?" I laughed that you-know-how-it-is-with-these-blasted-tight-pins laugh, a laugh that was supposed to elicit from him some affirmation of yeah-I-know-how-it-is. The affirmation never came. Instead his eyes narrowed and he stroked the side of his face. Actually, I think he was getting hungry. After a brief moment he said, "So what's the problem?" What's the problem? I thought. Is he kidding? I explained the problem. He asked me to continue tuning so he could watch. After doing a few pins he estimated that we probably should forget lunch, and that we might make dinner — just — if the remainder of the "tuning" went hitch-free. I asked for comments and suggestions and he responded with a tuning demonstration that I've never forgotten.

"Rule number 1," he instructed, "never move the pin any more than you absolutely have to in order to tune the string."

"What do you mean by move," I asked. "Do you mean move it in the block?"

"Not necessarily. I mean move it in any way, shape or form. If you've only twisted it, or sprung it by slight bending you've moved it. The pin doesn't have to move in the block for you to consider it moved!"

"Rule number 2," he continued, "the tuning pin is a means to an end." "Do to it anything you have to, but as little as possible in a non-destructive way, in order to get the string in tune."

"Rule number 3 — pound the key hard so as not to let the string remain hung up at its various bearing points; and settle in your pitch from a too-sharp position, ending up where you want it."

He began tuning the piano as I watched. Along the way I asked how many pins he could feel "move". His head dropped to his chest. "There you go again," he said; "you're hung up on the pin moving in the block. On THIS piano especially you have to let go of that idea." He was making it all look so easy. Very little hammer movement, no snapping and jerking pins. He seemed to be "putting" the piano in tune with very deliberate hand, wrist, and arm technique.

When he finished the job I asked him to explain what he had done by demonstrating on a single pin. "OK," he said, "but first I have a question for you. In so called 'fine tuning' what do you do if a unison is very close to perfect, but you hear a slow roll of about 3 beats in 5 seconds?" I really didn't have an answer since solid tuning to me meant — and he knew it by now — the pin must move in the block! But even in a very

tunable piano, eliminating 3 beats in 5 seconds is usually too fine a manipulation of the pin to actually require gross movement of the pin in the block. So I learned something else: the techniques for tuning the tight pin, and fine tuning any pin, tight or right, are essentially the same. Great. So what are these techniques?

I'm going to make this so simple you won't believe it. But first some definitions. "Turning" the tuning pin means the entire pin has moved, the feeling that it has moved or clicked in the wood is obvious. "Twisting" the pin means that the pin has twisted along its axis but has not turned perceptibly in the wood. Something else to keep in mind is that the tensions in the string along its length from tuning pin to hitch pin are not the same. Pounding a key properly will cause a condition of tension equilibrium to occur (the string will be stable and not creep up or down). This does not mean, however, that the tensions in the various sections will be the same, nor should they be.

So let's say you are tuning one string of a unison to another. The string being tuned is two beats below where it should be. The pins are of the seriously tight variety, and you know that if you turn the pin you will be way too sharp of where you need to be. So, apply a steady upward pull, that is, twist the pin, while delivering firm blows to the key. Continue until the string goes several beats sharp (just guess). Hold the pin at that place and continue to play the key sharply and firmly. At this point the string segments are in equilibrium, but you are holding a twist in the pin with the tuning hammer. Now relax the tuning hammer thereby relaxing the twist, and pound the key. You may be able to pound the string right into tune. If not, exert a moderate downward twisting force into the pin and pound the key until the string goes into tune. Finally, "center" the pin by "playing" the tuning hammer in small but definite clockwise and counterclockwise bumps. If the string is still in tune you have done it. Notice how critical the firm blows to the key are. The pin is simply used to change the pitch of the string, but due to friction at the various points, pounding the key is necessary in order to get the string to render across those points.

If you've relied on always feeling the pin turn, you will find this technique unsettling. But with a little practice you will be amazed at how easy and sure it is. And remember, it can be used on pins of any torque for fine tuning, and on troublesome pianos where the string is hanging up at various places.

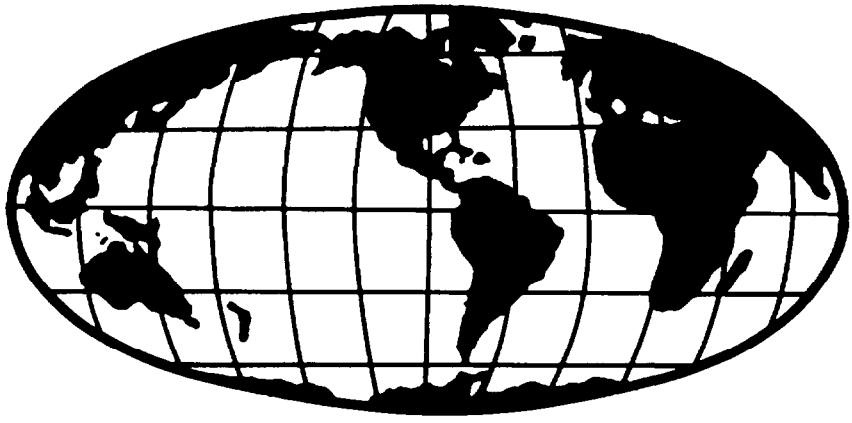
Oh, as to our lunch date. We made it with 20 minutes to spare. When we sat down I continued to question him on tuning techniques for problem pianos of every sort — from New Mexico desert pianos to underwater tuning. He said that tomorrow was another day, and we proceeded to discuss his real passion in life, playing the drums. Interesting guy.

Next time.

J

International Relations

The 1993 PIANO TECHNICIANS GUILD



TOUR • OF • EUROPE

After many months of communications between the English Pianoforte Tuner's Association, and both French and German representative of Europiano, we have finally worked out the details for a wonderful PTG tour in May of 1993. This tour will include many sightseeing and cultural opportunities in England, France and Germany. We shall also have the opportunity to participate in several major piano related activities. We are fortunate to again have the services of The Accent Group helping us plan and coordinate all of our activities on this trip. They did an amazing job for us on our last trip to the Orient in 1991.

This tour has several major components to it which may be taken individually or combined to suit individual needs and desires. Let me describe these different parts and show how you may customize the possibilities to meet your own needs.

The first part of the tour starts in England with a four-night stay in London with various sightseeing trips and free time to explore on your own. We then have one day and night in Stratford where we will visit Shakespeare's Birthplace, Anne Hathaway's Cottage and attend the four-day annual convention of the Pianoforte Tuners Association. Along with the various technical classes there will be other trips available for spouses and technicians. One of these will take us to the Yamaha Kemble Piano Factory.

The second portion of this trip shall start when we leave Colchester and travel to France. There we shall see the sights of Paris and also attend both the Europiano Convention and the Eighth IAPBT (International Association of Piano Builders and Technicians) Conference. The Europiano people have lined up a wonderful convention as well as various cultural events for us such as a visit to the Paris Opera, climbing the Eiffel Tower, a boat tour on the Seine, and a dinner show at the Folies-Bergeres. The IAPBT Conference shall be very important since it will be the first time that the Europeans will have attended in large numbers. It is our hope that this will lead to them joining IAPBT!

On the final leg of the tour we leave Paris for sightseeing in Reims, France, Luxembourg, Heidelberg, Stuttgart, and Munich, Germany. We shall also visit the Pfeiffer Piano Factory in Stuttgart, the Neupert Company's Factory in Bamberg and a special tour with the curator of the Deutsche Museum which has one of the most fascinating collections of pianos you will find anywhere.

You may wish to join us for the entire trip, which would be from May 6 through May 30, or one of the shorter portions.
Here are the options:

1. May 6 - 16: The England Tour and Colchester Convention

2. May 6 - 22: The England Tour, the Colchester Convention and the Paris portion of the Europiano Convention and the IAPBT Conference.

3. May 15 - 30: The Paris portion with Europiano Convention, the IAPBT Conference, and the continuing tour on through France, Luxembourg and Germany.

4. May 6 - 30: The entire tour of England, France, Luxembourg and Germany.

For more information and application forms please call or write:

Ed Hilbert, RPT
40 Pleasant Street
Bristol, VT 05443
802-453-3743

1993 EVENTS CALENDAR

JANUARY

8-9 — **Arizona State Seminar**
Phoenix, Arizona • Contact Gary Miles
3722 W. Port Royale Lane, Phoenix AZ 85023, 602-942-2588

FEBRUARY

12-14 — **California State Convention**
Sheraton Long Beach • Contact Bruce Stevens
1442 E. 64th St., Long Beach, CA 90805, 310-423-7023

13 — **Nebraska One Day Seminar**
University of Nebraska, Omaha • Contact John Minor
4308 Pacific S., Omaha, NE 68105, 402-553-8694

MARCH

12-14 — **South Central Regional Seminar**
Fort Smith, Arkansas • Contact Bill Yick
Rt. 3, Box C644, Charleston, AR 72933, 501-965-7945

18-20 — **Pacific Northwest Conference**
Seaside, Oregon • Contact Randy Potter
61592 Orion Drive, Bend, OR 97702, 503-382-5411

18-21 — **Pennsylvania State Convention**
Holiday Inn-Bucks County, Trevose, Pennsylvania
Contact Patricia Sierota
102 Bridle Path Lane, Feasterville, PA 19053, 215-364-2564

April

15-17 — **Mid-South Spring Seminar**
Memphis, Tennessee • Contact William R. Carmichael
901-372-1095

23-25 — **Florida State Seminar**
Howard Johnson's-Daytona Beach, Florida
Contact Walter Pearson
1128 State Ave., Holly Hill, FL 31227

24 — **Los Angeles Chapter Seminar**
La Canada Presbyterian, La Canada, CA
Contact Jim Karukas
3925 Big Oak Dr. #8, Studio City, CA 91604, 818-506-3077

April-May

30-2 — **Central West Regional Seminar**
Collins Plaza Hotel, Cedar Rapids, Iowa
Contact David C. Brown
1719 Bever Ave., SE, Cedar Rapids, IA 52403, 319-362-0820

30-2 — **New England/Eastern Canada Seminar**
Merrimack, New Hampshire • Contact Bill Ballard
R.R. 3, Box 875, Putney, VT 05346

AUXILIARY EXCHANGE

Dedicated To Auxiliary News and Interests

A very happy new year to all of you and yours. Each year we all say, "Where did the last year go?" And every year it goes faster and faster. There are never enough hours in the day. That is why I decided to write about New Year's resolutions. Everyone else talks about them, so why shouldn't I?

I hope that you will read the wonderful article written by Ginger Bryant later in these pages concerning the forming of the PTGA Scholarship Fund. I sincerely hope that you have included the contribution to the PTGA Scholarship Fund in your New Year's resolutions. You can make it in the name of a loved one who may have died this year or a new baby born into your family this year, or in the name of a good friend or just because you care. Now is the time to decide which causes you are going to support this year. One can not possibly support them all and now would be the perfect time to consider your contribution to our own scholarship fund. Remember, the recipient performs for us at the auxiliary tea during convention. What better way to support piano performance and have a program at the same time?

Last fall as I was driving through Appalachia on my business trips for my other music organization, I just marveled at the beautiful colors in the mountains and began reflecting on all the many blessings we have as nation. We are certainly well blessed and giving to others seems to be the American way.

I remember back when I was in music school. I thought the price of sheet music was outrageous and lessons were way beyond my allowance. Well, today those things are off the map. I can't believe what they get for some of the music one has to buy today and lessons are twenty-five and more dollars for a half hour. So, please give to the scholarship fund whatever you can. You will feel good about helping a young piano student on his/her way to a career and also that student will need the piano tuned often to be a good student. We all hope they use a member of the PTG, of course.

And, remember also to include the PTGA Scholarship Fund in your will. It is never too early to make a will for your family and including the PTGA is the right thing to do because you care.

I sincerely hope that you have had a wonderful holiday filled with many hours of sharing with family and friends, good food and celebration. May you be blessed with many riches. Please remember to set aside an account for a convention fund for the trip to Milwaukee in July. You will be doing something for yourself and I look forward to seeing all of you there.

Also in your resolutions, please remember to have your tuner spouse sponsor a new member in our Auxiliary. My resolution this year is to make one thousand members our goal. Set your goals high and reach for them. I was told by our treasurer just last week that we have 219 paid members. With over three thousand registered tuners we should have at least fifteen hundred members in our organization, don't you think? We need everyone's help to reach that goal, but with love we can make it.

Happy New Year, 1993
Phyllis K. Tremper, President

From The Auxiliary Editor...

Happy 1993 to everyone! The coming year promises to bring some exciting chages for our family as we contemplate moving a family of four confirmed packrats as well as two businesses to a new home.

As Phyllis mentioned in her article, she has made it one of her resolutions to greatly expand the PTGA membership. If each of us were to encourage even one person to join and each of those people were to recruit one more new member, we could reach her goal in no time at all! Try asking the other spouses in your local area if they even read these pages and are aware of the PTGA. I'd be willing to bet that there are those who don't even know that we exist, let alone have two pages of the Journal for our use every month.

Do you realize that it's only seven months until we convene in Milwaukee? I have never had the opportunity to visit there—anyone with tidbits of information about sights to see or things to do in the Milwaukee area, please pass them on to me or Jan Blees, our Newsletter editor, so that we can share them with others.

Also, please get your 1993 dues in to Barbara Fandrich ASAP so that you are included on the newsletter mailing list.

A new year is beginning, which is like having a clean slate to use, so in the words of Arsenio, "Let's get busy!" JR

The History of Our Scholarship Program

Most members are aware PTGA has a Scholarship Award for aspiring pianists, but many don't realize how it came about. The first awards of $400 (senior) and $200 (junior) were awarded in 1988 in St. Louis. Similar awards have been given every year since although amounts have increased slightly. Ten awards with an aggregate total of $3,200 have been given and the Scholarship Fund has soared to over $6,000. This means YOU, THE PTGA MEMBERSHIP, have raised in excess of $10,000 in just a little over five years!

It was at the 1985 Board Meeting in Kansas City that the first steps were taken. A fund raising effort was undertaken to be called "Christmas in July." Members were to be asked to donate various items for sale at the Las Vegas Convention with proceeds going into a Scholarship Fund. I was Vice President and Exchange Editor at this time and was put in charge of the program since it was inaugurated at my suggestion.

Due to the enthusiasm of the membership, Christmas in July was quite successful. We highlighted it by raffling off a hi-tech, state-of-the-art electronic train set. Together the two projects brought in over $2,000. This amount was given a considerable boost when Golden Gate Chapter member Dorothy Silva approached the microphones and requested recognition to speak. She stated that her mother had been a piano teacher all of her life and she had left her some money. She wished to make a $1,000 donation to the PTG Scholarship Fund in her mother's memory. Ron Harper, a visiting technician from Australia, won the raffle and is now an enthusiastic train collector. He has remodeled his garage to accommodate his trains and his wife reports he spends most of his time with them.

Two immediate problems arose. The first was arranging for the contributions to be tax deductible. Just calling something a charitable contribution doesn't make it deductible and the required paperwork to become bona fide to IRS required lawyers and other undesirable procedures. We approached the PTG Foundation to see if they could administer the program for us. They couldn't legally do this unless all contributions were made to the PTG Foundation and would thereby become PTG Foundation funds and PTGA would loose legal control over them. The Foundation could, however, keep separate the PTGA contributions and disbursements. This they agreed to do. It is necessary for you to specify that you want your contribution to the PTG Foundation to be for the PTGA Scholarship Program.

All expenses incurred by the Scholarship Committee are paid out of the PTGA treasury and expenses incurred by bringing recipients to our convention come out of convention expense monies which means that 100% of YOUR DONATIONS to the PTGA Scholarship Fund go into the fund.

The second problem was the selection of recipients. It was decided this could best be accomplished by making an award available to winners of existing competitions. We chose to make it a "Traveling Scholarship" that would be given to winners of State Music Teachers Association competitions in the state of that year's PTG Annual Convention. What better use of our money than to make awards to two such competitors to help defray their costs to go earn additional money by performing at our conventions and it gives us the benefit of what has proven to be outstanding piano talent.

PTGA Scholarship winners have played at our Tea for each of the past five years and the Baldwin Piano Company has retained them to play prior to their reception for the past three years.

Last year's award was slightly different. The competition chosen was a Concerto Award given to 1st and 2nd place finishers. The first place winner, Bill John Newbrough, of Walnut Creek, California, accompanied by Beverly Tom of the Sacramento Symphony, played the winning program at the Sacramento Community Center prior to the Baldwin reception. Bill John also played solo selections at the PTGA Tea.

Ginger Bryant
Sacramento Chapter

FYI... Articles and information for the newsletter may be submitted to Jan Blees, 515 Poplar Avenue, Webster Groves, Missouri 63119

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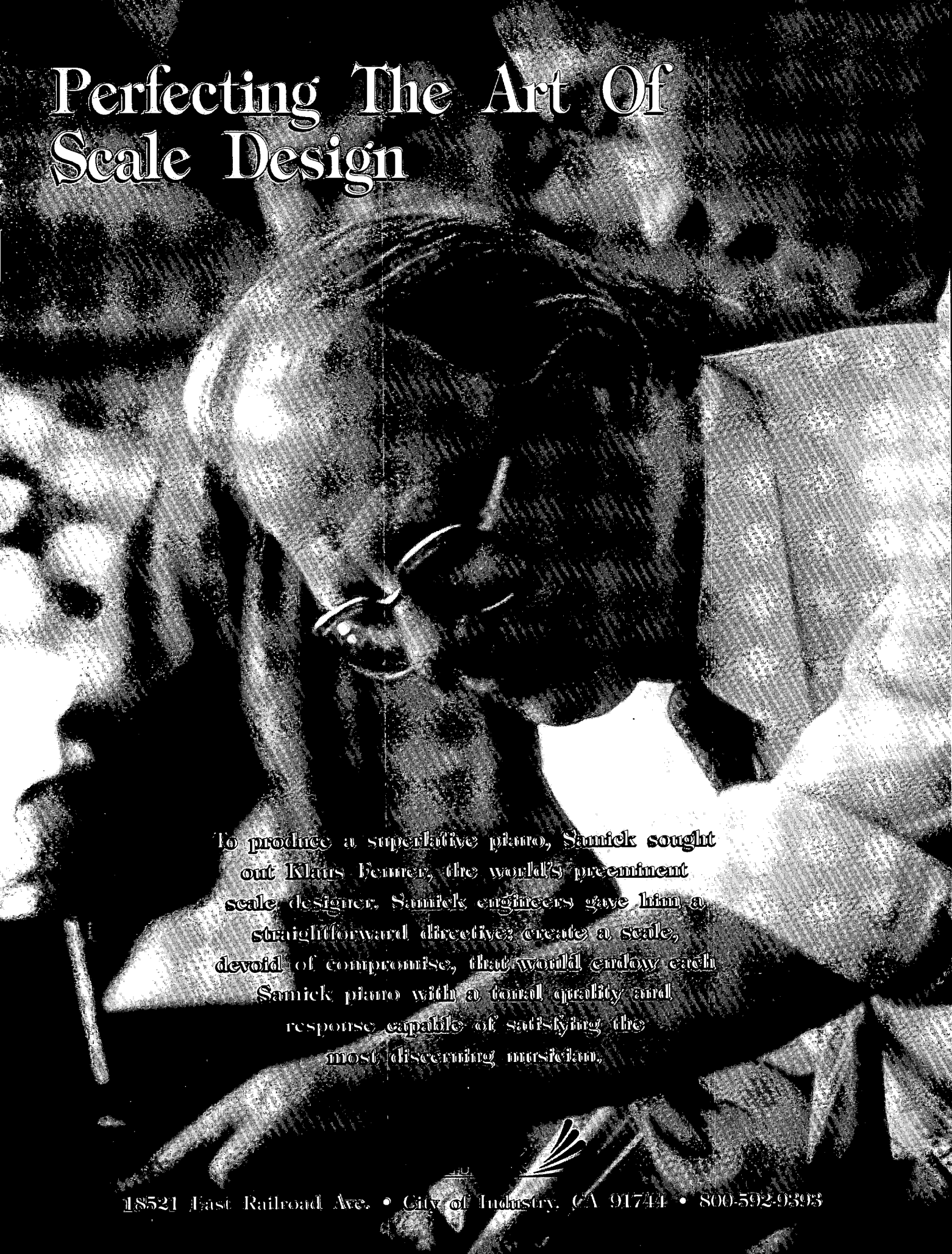
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Tech Gazette

Yamaha Piano Service January, 1993

TECHNICIAN VS. MANUFACTURER (?)

- by Lloyd Whitcomb

This is a bit of a departure from our normal *Tech Gazette* format, as you'll soon see. In the next couple of issues, I'll be talking with you, the technician in the field, about some of the elements involved in dealing with a piano maker. The examples I will offer are true, real-life situations I've personally dealt with.

I'm also aware that by being so frank and candid, I face the risk of offending someone. On the other hand, I hope you'll find this to be interesting, at least. So, grab a cup of coffee (or whatever your contemplative beverage might be), and let's chat for a while.

First, though, allow me to set the scene: the piano technician is seated at a new piano, recently delivered to a customer's home. The customer, now deeply in debt from having signed a few dotted lines to finally get that "piano I've always dreamed of owning" is hovering over the technician's shoulder. Let's listen in, shall we?

TECHNICIAN: "Hmm. I'm not sure about this."

CUSTOMER: "Is there a problem?"

TECHNICIAN: "Gee, I don't know. I've *never* seen a XXXX piano (*you name the brand*) do *this* before! Sorry, but I don't tune pianos that have *that* problem. Maybe you'd better call the company. Well, bye-bye for now. See you in six months."

Sound absurd? Well, perhaps. Unfortunately, though, we at Yamaha daily find ourselves involved with situations that start out just that way. This might sound a bit severe, but most piano manufacturers would likely agree that some of the most difficult customer service situations come about as a result of something the piano technician inadvertently says or does.

HOW'S THAT AGAIN?

Remember the party game we used to play, called "Gossip"? You know the routine. Someone whispers something to the closest person, and it's relayed around the room, only to take on a much different complexion when the last person recites it. One of the first things to keep in mind is that people hear things differently. This is especially true in the case of a customer and a service technician. For example, you might be trying to convince the owner that the piano is normal, and you might say something like, "I really can't do anything about that sound." Well, you're probably accurate. But by the time it gets filtered through a customer's apprehensions, it gets to my phone in the form of, "Even the piano tuner said there's something wrong with my piano, but wouldn't even try to fix it." See the similarity? And the difference?

Don't "drop a bomb" in the customer's lap, saying they'd better call somebody, and then drive off into the sunset. Whatever the real or perceived problem, how can you expect that customer to describe it to us? In order to be at all effective in dealing with the matter, we must be able to "talk shop" with the technician involved. This gives us a much more complete technical picture of what's really going on with the piano.

The piano may very likely be the most expensive item in that home, and its purchase is often highly charged with a host of emotions. Beyond that, and perhaps similar to a car in some respects, the piano often serves as a statement of self-image. Attack the piano, and you attack the very integrity and self-worth of the person who bought it.

IF IT'S NORMAL...

Granted, this is something that could be possibly be left unsaid. But I see it often enough to make it worth mentioning.

Since you are nearly always closer to the piano than we are, the customer will consider you to be the unquestioned expert. And that's as it should be. But keep in mind that if the customer complains about something that you - in your heart - know really to be normal, don't be pressured into agreeing that there's a problem.

There are at least a couple of solid reasons for this. One, obviously, is that it's difficult to fix something that isn't broken. The other, perhaps less apparent on the surface, is that if we're able to convince the customer that the piano, in fact, is just fine, then you could stand to lose some credibility. That could be costly on all fronts.

We'll continue our discussion next month. Until then, remember, our number is toll-free and we look forward to hearing from you.

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PIANO TECHNICIANS Journal UPDATE
FOR MEMBERS OF THE PIANO TECHNICIANS GUILD, INC.

PTG Dues Due January 1

PTG membership dues for the 1993 calendar year are officially due January first, and will be delinquent at the end of this month. Invoices mailed November first to all RPT and Associate members included $126 for Guild dues, a $12 special assessment for marketing activities, and, for those in the 99 chapters that requested the Home Office dues collection service, chapter dues. Statements for unpaid dues will not be mailed until February first after the dues are officially delinquent.

If there are members who are unable to pay their 1993 dues because of hardship or other special circumstances, they may contact their Regional Vice President. If special arrangements can be made, the request must be received by March 2, when those whose dues are delinquent will be dropped from the membership roster. No special arrangements can be made after that date.

1993 membership cards will be mailed to all paid members in December. Because Council allowed a year to use up existing materials, 1993 RPT cards will carry the designation "Registered Tuner-Technician." This will allow us to realize the significant cost savings from ordering a two-year supply of cards. 1994 cards will carry the "Registered Piano Technician" designation, and both RPT and Associate cards will carry the new PTG logo in 1994.

Members are urged to contact their RVP for any further questions concerning dues payments: NE RVP, James Birch, 56 Nashville Road, Bethel, CT 06801, 203-744-4842; SE RVP, Eugnia Carter, 4317 Commonwealth Avenue, Charlotte, NC 28205, 704-568-1231; SC RVP, Robert Johnson, 7908 Joliet Avenue, Lubbock, TX 79423, 806-792-9712; CE RVP, Richard Bittner, 519 Melody Court, Royal Oak, MI 48073, 313-398-3876; CW RVP, Michael Drost, 1052 South Fork Drive, River Falls, WI 54022, 715-425-3940; W RVP, Jim Coleman, Jr., 2121 S. Priest #102, Tempe, AZ 85282, 602-966-4055; PNW RVP, Taylor Mackinnon, 772 NE Arrington, Hillsboro, OR 97124, 503-648-5247.

Nominations, Bylaws Proposals Due

Nominations for 1993-94 PTG officers should be sent to the Chairman of the Nominating Committee, Ron Berry, RPT, by Feb. 1, 1993. Nominations should be sent to Berry at 6520 Parker Lane, Indianapolis, IN 46220. According to PTG's Bylaws, "Any chapter may submit a nomination. Any member in good standing may offer his or her own name for consideration."

Proposed changes to the PTG Bylaws, Regulations and Codes also are due Feb. 1, 1993. These should be sent to Bylaws Committee Chairman Danny L. Boone, RPT, 9707 Timberview, Waco, TX 76712. Amendments may be proposed by a chapter, a committee or the Executive Board.

At Your SERVICE

Colette Collier, RPT
Chapter Services Committee Chair

Only in your wildest dreams could such a scenario exist: you have been working for nearly 18 months on preparations for hosting your state conference. The turnout looks like it will be the best ever, nearly twice that of previous years. Everything is ready. All the final arrangements have been made—even the signs for the classrooms are done. The careful preparations have paid off. Only 24 hours before the big event is scheduled to begin, you can relax—it's all under control.

And then the phone call came to Rolf von Walthausen and Ellen Sewell, co-chairs of the Ohio State Conference this past October. It was the conference hotel, informing them that they would have to vacate the classroom, auxiliary room and exhibit space assigned for their conference, because President George Bush was coming to town. The US Secret Service had told the hotel to clear everything out during the arrival, speech, press conference and departure, and to "relinquish control over security, scheduling, etc." To further complicate matters, the general manager of the hotel was away for Yom Kippur and could not be reached. Several hours of conversation by conference call later, the situation was left unresolved for the night—and not a very restful night in Ohio for two conference coordinators.

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In Memory...

Wendell D. Hart
Oct. 24, 1918
Nov. 17, 1992

The PTG has lost one of its valued charter members. Wendell D. Hart died during heart surgery on November 17, 1992. He was a charter member of the Salt Lake City Chapter when the Guild was organized in 1958. He began in the music business in Preston, Idaho in 1934, operated a rebuilding shop in Salt Lake, and then moved to Grand Junction, Colorado in 1962. He was actively tuning until the week before his death. He was the technician for many years for the Grand Junction Symphony and the community concert organization. I enjoyed attending concerts with him and discussing voicing of the piano and how we might improve it for the next concert. He was the most solid tuner I have seen and I still am trying to imitate his stable tunings. Pianos were in his "blood." His grandfather, my great grandfather, was a soundboard builder for John Broadwood in the 1800s. The night before surgery he was reading "My Life With The Great Pianists," a gift from Franz Mohr which I will always cherish. Without a doubt, the fondest memories of my childhood were when my father and I would "hit the road" on summer tuning trips with a handful of leads. This was the early sixties and I was eight years old. For weeks at a time we traveled the back roads of Wyoming, Colorado, Utah, Idaho and Nevada; sometimes going door-to-door. He built on this until at one point he had a forty foot tractor-trailer rig packed with pianos and a repair shop and it literally was a store on wheels. I spent entire summers listening to him tune and years later when I began tuning I found that my ear was already trained and I picked up the skill with very little effort. I never do remember actually learning piano technology since I spent my entire childhood in the shop and there was never a time when I wasn't leveling keys or setting let-off or doing something to a piano. After high school, I decided that I was never going to be a piano "tooner"; however, after several years of college and after discovering a new appreciation for the engineering of the instrument and being a bit wiser, I decided to go back to the piano shop. As the years passed our roles reversed and he became the "dollyman" and did the lifting. He was the inventor of dozens of piano tools which I use almost daily. He and Errol Crowl (PTG's first president) taught the use of a damper tool he invented in Chicago at the 1964 PTG convention. He conceived the idea of the Hart Knuckle Remover which I developed into a tool. When I came up with a butterfly spring tool that I thought might have some merit, I couldn't wait to show it to him, like a child coming home from school with a good report card. It was his years of experience and encouragement that made me decide to market it. On days when the work became tiresome, we would often have lengthy discussions on soundboard theory and design but he knew that talk was cheap and so he proceeded to build the most beautiful soundboard press I have ever seen. His service van was a work of art inside with tens of thousands of parts that he carried to every job. Every part or tool was indexed for fast access. The days are long, quiet and lonely around the shop now. The greatest lessons learned were not about pianos and they were never spoken. I will forever be indebted to him for the values he instilled in me through his example. He was the kindest man I have ever known and I miss him dearly.

Glen Hart
Grand Junction, CO

Harold Standring
June 15, 1912
October 25, 1992

Over the years many of us have been privileged to meet and work with people in our profession who have a vitality and presence that gives us a sense of immediate liking. Such a person was Harold Standring. "Stan", as we knew him, died on October 25th, at his home in Wymouth, Massachusetts. I first met him when I joined the PTG in 1971. Several years ago we traded president and vice-president spots for the now defunct Southeast Massachusetts Chapter PTG. Over the years we have shared many meetings and enjoyable conversations. His presence and contributions at our meetings will be sadly missed. Would that those who follow us could remember us with such warmth and affection.

Walter J. Woitasek, RPT
Brockton, MA

Membership Status

Northeast Region	863
Northeast RPT's	525
Southeast Region	653
Southeast RPT's	385
South Central Region	324
South Central RPT's	203
Central East Region	638
Central East RPT's	392
Central West Region	392
Central West RPT's	246
Western Region	643
Western RPT's	382
Pacific NW Region	396
Pacific NW RPT's	233
Total Membership	3,909
Total RPT's	2,366

...At Your Service
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Early the next morning, a compromise was reached. Class time would be changed to accommodate the President's movements. Three of the four classrooms would be returned for use, however all people must agree to be searched, to walk as a group, remaining locked in the rooms during class times. The fourth classroom would be in the "fine dining" restaurant, which would be closed for food service. The exhibit hall would be in the bar/night club: "disco floor, mirror ball—the works" said Rolf von Walthausen. The auxiliary would have to meet in the lobby area, and the PTG registration table would have to be next to the press check in/clearance table in the main lobby.

As Rolf writes: "The hotel agreed to close the bar before the scheduled exhibitors set up time (6 pm) and agreed to move out all the bar tables and move in 8 foot regular tables. I had to scramble to see where to put people, and an outside lighting contractor had to be called in to provide portable lighting in the dim bar. Dining tables in the restaurant had to be moved out, and the chairs and piano moved in for the classes in room #4. The schedules had to be amended to reflect time, classroom and exhibit hall changes. And all the time, Ellen and I had to redirect people as best we could (our pre-made signs were all wrong, too) and help registrants, instructors and exhibitors remain calm and cool. We seemed to be constantly having to reassure people that everything was going to be OK."

And this was only Thursday! By mid day Friday things had reached a fever pitch. According to Rolf von Walthausen: "Three Greyhound buses arrived with the press corps. The highways and roads surrounding the hotel were closed, helicopters circled, and there were men on the roof with rifles and walkie-talkies. Rick and Cindy Baldassin figured on getting a ring side seat at the next door Wendy's, so they sat down to partake of the endless salad bar while we all waited. In the meantime, our classes were to begin, so we had to round up everyone, sending them to the main lobby. The security guards took them back through metal detectors and searches, to the classrooms back by the press corps.

"Then came the motorcade—at least four or five limos, twenty or thirty white vans filled with security cops and more press, and about five dozen police cruisers. The limos backed up to the kitchen door, surround by the white vans and President Bush was whisked in without a trace. By this time there was a crowd of onlookers, maybe 100 or so, behind police lines waving American flags (distributed by the Bush people) and Bush/Quayle signs. A few dissenters—including a prominent member and fine TUNER of the DC Chapter—were wearing Clinton/Gore buttons (passed out by a subversive member of the Cincinnati Chapter).

"An hour later, the procedure was reversed, and all 140 piano technicians were left in peace—sort of. That night we still had to move the exhibitors out of the bar and into the regular breakout rooms, and move pianos, registration tables, and audio-visual equipment back into the regularly scheduled rooms. Saturday and Sunday classes went by without a hitch—so we were still able to use our original schedules and classroom signs."

Ellen Sewell comments on the ordeal: "I was very pleased that we could work things out between the hotel staff, Secret Service and PTG members. There were different people working from different angles, and with different needs. With everyone compromising , all were able to get their needs met: it was a win/win situation. Luckily for us, because we were so well organized in advance, we were able to present a successful seminar in spite of the curve we were thrown at the last minute. As a bonus, we could also provide our attendees with a glimpse of the President of the United States!"

Robert Guenther, of the Waukegan Chapter seemed impressed with the Cincinnati Chapter's efforts. He writes in the *Partial Post*: "It messed up the class schedule a little bit, but that's about all, other than giving us newsletter editors something novel to write about. After all, we were frisked by the Secret Service. Now how often can you brag about that after attending a PTG event?"

So, congratulations to Ellen Sewell and Rolf von Walthausen for your excellent crisis management skills, even in the face of all the US Government could throw at you!

Newsletter News:

From "In Tune", the newsletter of the Calgary, Alberta Chapter:

"Here's one from Claire Booth who lives at Spiritwood, Saskatchewan: Strange things happen up here in the Saskatchewan north. A lady contacted me about tuning her piano. When I told her the day I could come, she said she wouldn't be home but I should go in and work on it.

I got to the farm and , finding the piano in the front room, I started to tune. But I had the feeling I was being watched. When I turned around, I saw the culprits—a lineup of chickens and turkeys watching me through the picture window! They were a bit noisy but at least they didn't criticize.

I returned to my work but suddenly I heard a noise behind

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COMMITTEE BULLETIN BOARD

....Teacher Relations

The Teacher Relations Committee is updating our handbook, Presenting Programs to Teachers. We welcome input from all PTG members. If you have done a program for teachers recently or have other information that should be included in our new handbook, please send an outline or brief summary to Monica Hern.

...At Your Service

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me. I whirled around just in time to see the full length mirror over the sofa just starting to slip. I managed to get there and grab it before it hit the floor. Panting a little, I sat down with the mirror on my knees and reflected for a while.

Finally, I put it down safely and left a note telling what had happened. When the lady came to pay me she said they had put the mirror up temporarily with chicken wire just to see how it would look and then forgot about it. She expressed profound appreciation that I was there at the right moment to prevent a tragedy."

DATES & DEADLINES

January 1, 1993
New Year's Day—Home Office Closed

January 4, 1993
1993 Annual Dues Officially Due

January 8-9, 1993
Tuning & Tech Exams—Southern California Area Exam Board
Contact: Carl Lieberman
310-392-2771

January 11, 1993
Tuning & Tech Exams—Northern California PTG—Skyline College
Contact: Neil Panton, 415-854-8038

January 16, 1993
Tuning & Tech Exams—Northern California PTG—Sacramento
Contact: Neil Panton, 415-854-8038

Tuning & Tech Exam—Puget Sound Chapter for PNW Region
Contact: Jim Snyder, 206-863-0068

January 22-23, 1993
Mid-year Board Meeting, Kansas City, Missouri

January 31, 1993
Unpaid membership dues delinquent

February 1, 1993
1993-94 Officer nominations due to Nominating Committee Chair

Proposed Bylaw changes due to Nominating Committee Chair

March 1, 1993
Deadline for 1993 Council Delegate forms due.

March 2, 1993
Members delinquent in 1993 dues to be dropped.

March 21-22, 1993
Tuning & Tech Exams—Portland Chapter following PNW Conference
Contact: Dave Peake, 503-761-4800