PIANO TECHNICIANS
Journal
Official Publication of Piano Technicians Guild

June 1994 Vol. 37 • #6

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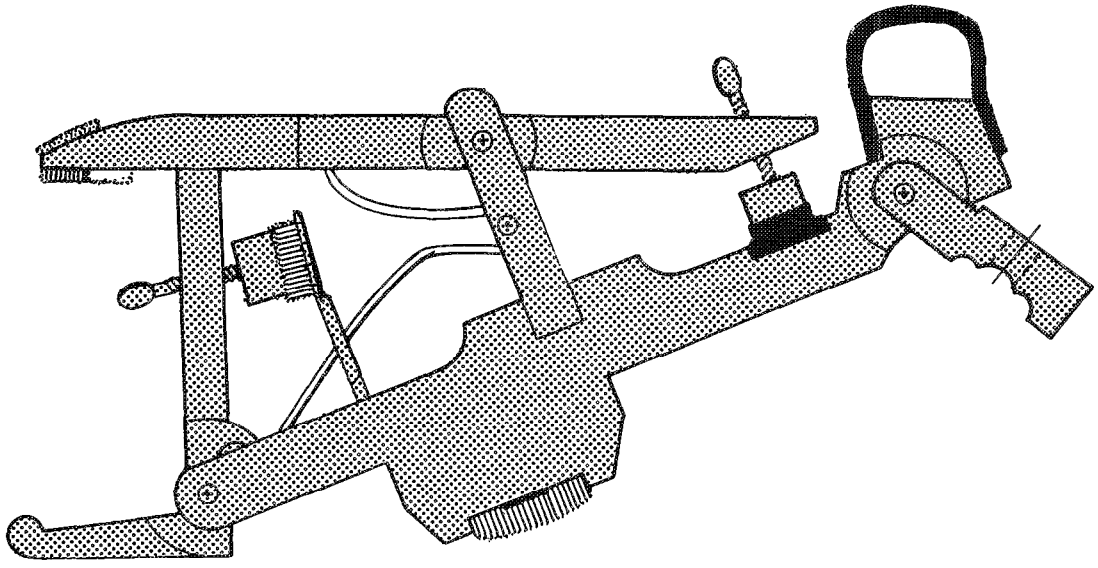

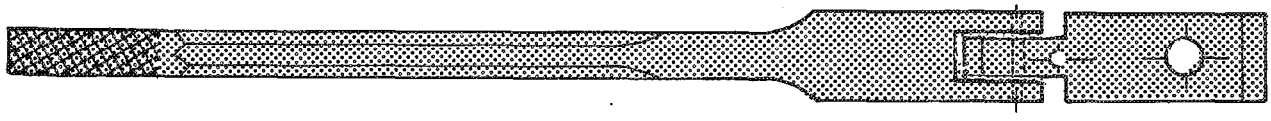

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June Verdigris

I'm not proud of it, given the people I work for, but then it wasn't really my fault. I wouldn't have been there at all if my great-grandfather hadn't been looking for a quiet place to light after the Civil War.

So call it fate, or kismet, or whatever, but since his choice of a place to live and my choice of employment over a century later made me one of the leading experts on the subject, let me clear up any possible confusion in your mind.

You see, I was born in Coffeyville, Kansas, a small town that sits on the banks of a muddy, meandering little stream called — yes, it's true — the Verdigris River. Down there, I think they even drink the stuff! I know they fish in it, although I can't tell you from personal experience how a catfish that has spent its entire life marinating in the stuff actually tastes.

Nobody that I know of has ever tracked the mighty Verdigris to its source, but I understand it originates in east-central Kansas near an even smaller town called Bazaar (must be a misspelling on my map). It flows generally south and east into Oklahoma where, near Tulsa, it passes through yet a third small town, this one named Verdigris. That's where Joe Lafuze reported finding the secret storage tanks of the stuff in our February issue. Even so, the secret probably wouldn't have come to light if the recent spring rains hadn't sent the river flooding out of its banks in Coffeyville this April. An Associated Press photo of a city employee wading through a trailer park was picked up by newspapers around the country, including one in Portland, OR. I know that because Tom Levings sent me a copy, expressing wonder at the idea of ankle-deep verdigris.

So what happens to all that verdigris after it flows out of Verdigris? It flows into a system of large lakes in eastern Oklahoma, from which it presumably pollutes the water supply of the entire Southeastern United States and several other continents.

I'm not ashamed of my roots, although if I was going to work with people who work with pianos, I might have preferred to have been born elsewhere, maybe in Stringtown, Oklahoma. That's right down the road from Boggy Depot, which sits on the banks of the Clear Boggy. But I digress...

Larry Goldsmith

Editorial Note: We encourage your opinions, comments, notes, letters and/or questions. Please submit them to: PTG Home Office, 3930 Washington, Kansas City, Missouri 64111-2963.

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COVER ART

Among items that have been donated to the Piano Technicians Guild Museum are, clockwise from top, a photograph from the second annual American Society of Piano Technicians Convention in Chicago in July 1942, an action model made by C.F. Stein, several tools handmade by a blacksmith for the late W. Dean Howell, a copy of the 1926 National Association of Piano Tuners Constitution and Bylaws, the June 1926 issue of The Tuner's Journal, a two-headed tuning hammer and adjustable tuning fork, a copy of the proceedings of piano technicians conferences in Chicago from 1916 through 1918 from the library of William Braid White, NAPT's ledger of income and expenses from 1954, a handmade tuning hammer from Russia, and a pocket fee computer produced by PTG in 1966. According to the computer, tuning fees were estimated to reach as high as $37 in 1993.

Cover photo by Larry Goldsmith

PACE
Professionals Advance through Continuing Education
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Inclusive OR Exclusive

Whom should PTG serve? Throughout our history, the debate over this deceptively simple question has raged in PTG. Should we be inclusive and welcome all who have an interest in piano technology, or should we concentrate on serving only the qualified professional piano technicians? Given the diversity of our membership, our opinions will likely cover the entire spectrum of possibilities. However, it is perhaps useful to reflect briefly on this philosophical debate again. Our years-long preoccupation with matters of logo use and membership categories grows out of this debate.

And indeed, the historical roots of this issue are quite visible. The correspondence between the NAPT and the ASPT regarding the merger that formed PTG in the 1950s reveals that some technicians felt the organization's role should be to protect members from competition. Even then, some believed that piano technicians were in oversupply and that the resources of the organization should not be extended to training potential competitors. Others clearly took the position that our profession benefits from the resources of many and from the free exchange of information among all interested in piano technology.

Over the decades as PTG has evolved, this debate has been influenced by legal and political realities. First, we have come to understand that, under the laws of the land, we cannot engage in any activity that restrains free trade. We publish an "Anti-Trust Guide" and, through it and various legal opinions we have obtained, we now know it is illegal to engage in any activity that is anti-competitive. In these litigious times, all trade associations like ours have become sensitive to our legal position. In our admissions policies, our Bylaws and our conduct we cannot interfere with any member's right to offer his or her services to the public.

Also, as the membership of PTG has grown, our attitudes have reflected the changing composition of the organization. Most of us have come to piano technology from a previous career, and thus have brought a wide variety of talents and experience with us. Fundamentally, the membership shapes the organization, and the will of the today's majority determines our direction. Recent decisions of the Council seem to indicate that a more inclusive stance is the current trend. In the 1980s Council acted, under legal advice, to allow all members to advertise their PTG membership. Furthermore, our Bylaws state that membership is open to any individual with a professional or avocational interest in piano technology. Our Mission Statement sets forth broad goals like continuing education and economic well-being for technicians, support of the piano industry, and an increased public profile of PTG. Can we reach these goals without expanding our membership base?

Over the years I have come to believe that, realistically, the only path we can take is the inclusive one. Most of us have learned the bulk of what we know about pianos through PTG, and are profiting from that knowledge in our businesses. How can we rationalize closing that door to others? And regardless of our experience level, we continue to benefit from the fresh energy and talents of newcomers who participate as chapter officers, teachers, and fellow learners. We must accept that in any group, there are always the non-involved, those who just want to join and do not plan to study, advance or volunteer time. In PTG, it is clear that non-participants can be found in all our membership categories. How can we fairly decide whom to exclude?

In our free society, anyone can practice as a piano technician with or without PTG affiliation. If we restrict membership, there will simply be more technicians out there with whom we have no communication or influence. Does this benefit us? Does it further our goals? I think not. Believing as I do that PTG's work benefits all technicians and the piano industry, I would like to see more, not fewer, colleagues involved in our organization. We cannot prejudge who might be a valuable member; we cannot accurately predict who has the ability to succeed in this business; and we cannot make policies that could be construed as anti-competitive.

Simply stated, we can and should concentrate on providing an organization where anyone can advance, can learn and can contribute to the profession. Directing our available energies toward this positive goal will benefit us, our industry and our clients.

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The *Guilds Are Alive?*

Executive Director
Larry Goldsmith

What does this term "Guild" really mean? I think most of us have some conception of a protective association of craftspeople, like the one in my dictionary: "An association of men with common aims and interests; esp. a medieval association of merchants or craftsmen."

I recently ran across an 1898 edition of the *Encyclopedia Britannica,* and took the opportunity to look up the term. It turns out there's a little more to the story than Daniel Webster is telling us.

For one thing, we tend to think of guilds in terms of people banding together for mutual benefit. That's true as far as it goes, but the original guilds seem to have been organized for the common defense, rather than economic interests.

We also emphasize the benefits we receive from association, rather than the fact that everyone is called upon to contribute for the good of the order. Yet, in earlier times, the emphasis was on payment of dues. The word "Guild" could have come from a number of sources, among them the Old English *Gild* or *Geld,* to set payment or contribution. Old English also had *Zeldan* or *Zyldan,* to pay, or also to yield. In Danish and Low German, it was *Gilde,* in the sense of a contributory company. In Icelandic, the words *Gjalda* and *Gildi* meant a payment, although *Gildi* also meant — here's the good news — a banquet.

In Welsh or Briton, *Gouil* meant a feast or holiday. In those languages *Gwylad* also referred to keeping or observing a festival. Some scholars believe that Guilds derived from the way extended families banded together for mutual protection. And as in modern families, they also gathered for banquets and sacrificial assemblies.

In the second and third centuries BC, the Greeks had *Eranoi* or *Thiasoi* — members paid contributions to a general fund, aided one another in necessity, provided for funerals, met in assembly to deliberate and celebrated feasts and religious sacrifices. Pope Gregory refers to a soap-makers' craft guild in Naples in the 6th century. Guilds were known to exist in 10th-century Italy, in seventh-century England and in 11th-century Norway.

Other scholars maintain that Guilds sprang from the Roman *collegia,* democratic companies of soldiers, tradespeople and other special-interest groups. It was attributed to Numa that he encouraged the formation of craft guilds — Plutarch enumerates nine. The Roman guilds became so powerful that they had to be limited by imperial decree. Guilds also were present in Italy, Gaul, India and China.

One important aspect of many early guilds was their democracy — noble and commoner, rich and poor, all participated equally. Women and even slaves had an equal voice in the assembly.

In the Middle Ages, there were four distinct types of guilds. *Frith,* or peace-guilds, were associations for mutual defense. In England and France of the early 13th century, trade guilds even took part in the defense of their cities.

There were social or religious guilds. Closely tied to the churches, they focused on Christian charity, helping "brothers in every exigency, especially in old age, in sickness, in cases of impoverishment — if not brought on by their own folly — and of wrongful imprisonment..."

Merchant guilds were tied to the town government through ownership of land. Therefore, guild law became the law of the town, especially in smaller communities.

In the cities, however, the separate occupations and crafts asserted their own power and independence. Craft guilds, therefore, developed largely through competition with the merchant guilds:

...in England and the north of Europe, the gild merchant during this period having grown rich and tyrannical, excluded the landless men of the handicrafts, these then uniting among themselves, there arose everywhere by the side of the guilds-merchant the craft-guilds, which gained the upper hand on the continent in the struggle for liberty in the 13th and 14th centuries. In England, these companies usually existed side by side with the old town or merchant guild until at length their increasing importance caused the decay of the old guilds and the adoption of these crafts as part of the constitution of the towns of the 13th and 14th centuries.

The craft-gildman provided for the maintenance of the customs of their craft, framed further ordinances for its regulation (including care against fraudulent workmanship), saw these ordinances properly executed, and punished the gild-brothers who infringed them.

...After the Reformation, all that remained was the common eating and drinking. In the centers of industry of Italy, France, Germany, even in Constantinople, they once formed the strength of commerce, but, abused and decayed, in France they were abolished on 4th August 1789. In Germany, their last remnants died in 1869. In Constantinople, numerous trade guilds were flourishing up until the war of 1877-78.

No more guilds? That's the problem with outdated information. Pass the word: rumors of our demise are definitely premature.

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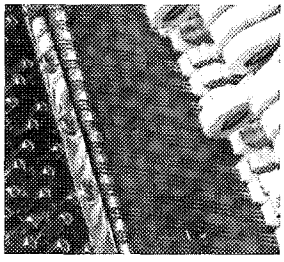

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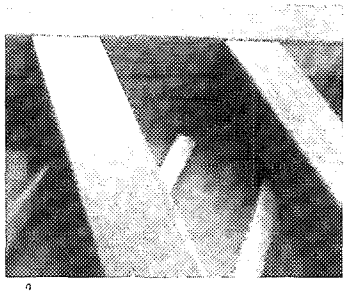

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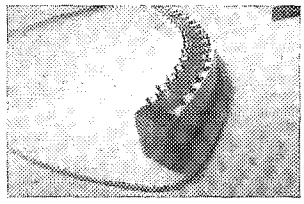

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The Piano is Dead...

I was pleased to read of Jim Harvey's experiences with a group measuring the pitch of a piano with a device other than we use to tune a piano and saying the piano wasn't in tune. I have had the same experience with a little different twist.

It has to do with a Baldwin concert grand SD at our church. The piano is dead on A-440 with the Sanderson "accutweaker" and my A-440 fork, using the F2-A4 beat rate comparison to verify the accuracy of A-4.

I have a Seiko tone generator. Turning it on at A-440, playing it with F2 creates the same beat rate as does the A fork. Moving to the conductors podium about 10 ft. away. I had to raise the Seiko tone generator to A-445 to match the pitch. This of course creates a problem when the fixed toned instrument's trying to tune up with the piano.

Do you have an answer? Another question: If the tone generator is a square wave generator, will this make the pitch different than a sine wave generator such as a piano? Looking forward to a reply.

Paul Monroe

Vertical Shank Replacement...

This letter is in response to the letter from Chris Day found in my just arrived April issue of the Journal. Specifically, I would like to respond to the first section of his letter dealing with vertical shank replacement as outlined in the PACE Technical Lesson in the previous issue.

Like Chris, I, too, have peered into many pianos that have had shank repairs used as the method of choice (for whatever reason) by some previous technician. Apparently, unlike Chris, I have had to replace too many of those repaired shanks that did not stay repaired. I've even had to replace shanks that I know had been properly repaired, because I did the original repair. In all cases, had the shank been replaced in the first place, both time and expense would have been saved. True, a good glue bond is stronger than the original wood grain, but it usually broke because of a weakness in the wood, or the wrong kind of wood (i.e. cedar).

Actually, the bigger problem for me in Chris's letter was when he said that the tools needed were more than most technicians take on their daily rounds. The problem here, as I see it, seems to be the difference between a tuner and technician, not that I'm saying that Chris is not a technician.

Yes, I take what I consider a "basic" tuning case into the home, although many technicians may not consider my "aerobic weight training apparatus" as a basic tuning kit. But I also carry my "basic service kit" — actually my car. You see, I think it is necessary to go prepared for many repairs that may be lurking in the darkness of each piano I service that day. That way if I need to make a repair, say replace a hammer shank, I can take the hammer butt and severed head section out to my mobile service kit/shop and do the messy part of the repair outside in the fresh air, leaving all the mess for the street sweeper.

Very seldom do I need to call my next customer to say I'll be late. But if I do, that customer is glad to know that I am taking the time on a piano to do the kind of service they want on their own piano. I'm proud to offer that service to all my customers.

Sincerely,
John C. Elving, RPT

It is a Vertical Piano Bridge...

Unless I am totally missing the boat, with all due respect to Chris Day and Jim Harvey and in defense of the so-maligned manufacturer/advertiser, the photograph to which these gentlemen refer in the April 1994 issue of the *Journal,* page 14, is not a reversed image, but is in fact that of a veritcal piano bridge being notched. One need merely observe the elevation of the pinblock and its proximity to the top edge of the soundboard, the cut out channel in the bridge cap to accommodate the mid-treble plate strut, and the notcher's body position immediately above the top edge of the pinblock to realize this is so. The lack of a bent side is evidence enough. I think Messrs. Day and Harvey have jumped to the conclusion that the bridge in the inset photograph is the same one Mr. Fenner and associates are observing in the larger photograph. Samick neither postulates or intimates this in this full page ad.

These thoughts come from an impartial observer who means no offense, yet wishes to set the record straight.

Respectfully,
David G. Hughes, RPT

Send your thoughts, comments or opinions to:
Piano Technicians Guild Home Office,
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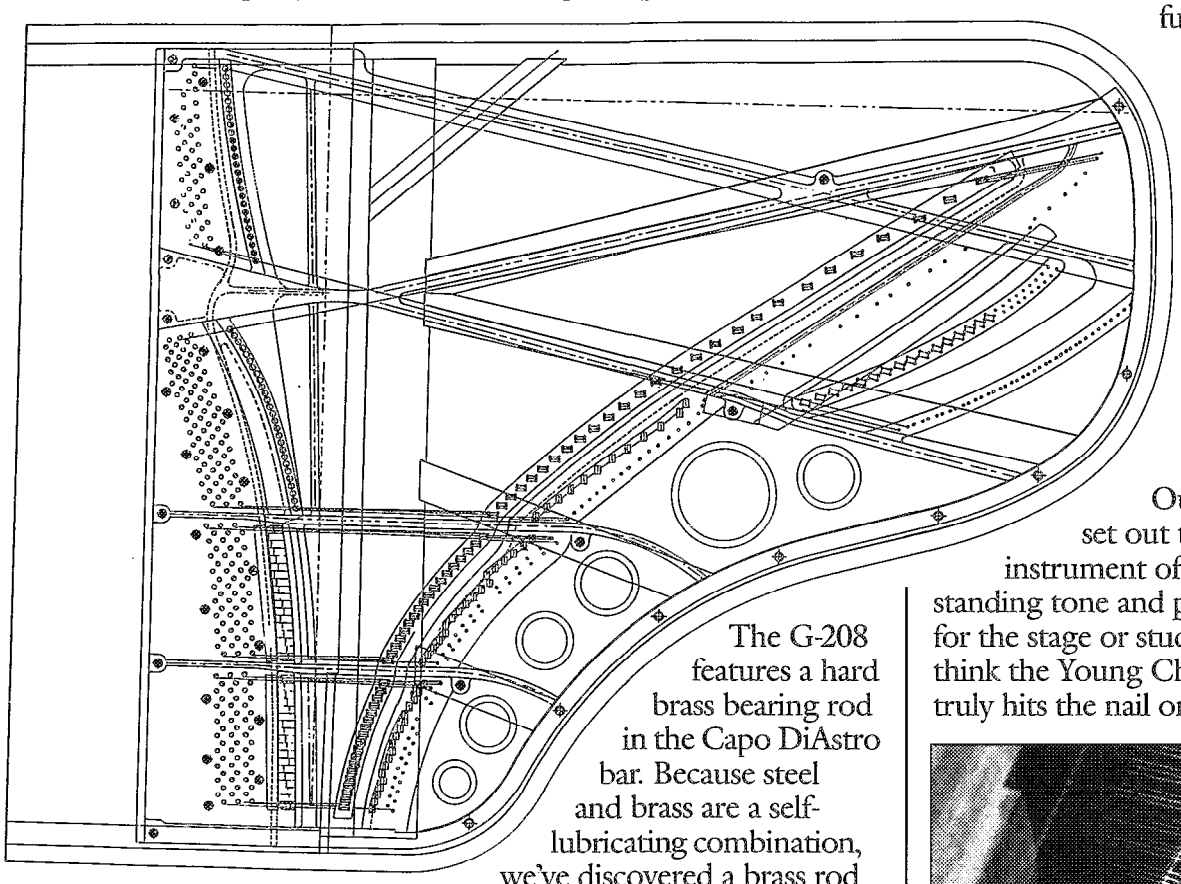
All letters will be considered.

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.



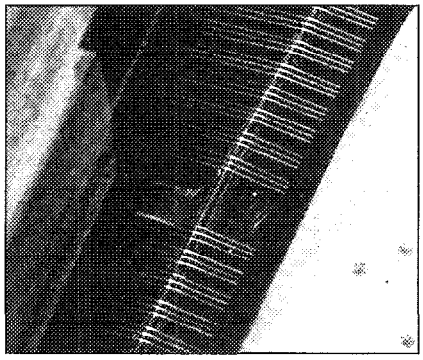
The G-208 features a hard brass bearing rod in the Capo DiAstro bar. Because steel and brass are a self-lubricating combination, we've discovered a brass rod offers better control of strings during tuning. In addition, the brass rod is easily replaced later in the life of the instrument eliminating the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

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Q What about the Franklin Hide Glue?

Franklin's liquid hide glue is useful for many wood repairs on pianos, because of its long assembly time and thin consistency. How does it compare in strength and hardness to hot hide glue? How about rigidity?—the squeeze-out sometimes seems to dry to a softer, less brittle state than that from hot hide glue.

And part II of the question: Franklin "Titebond" aliphatic resin glue is a popular general purpose wood glue for piano repairs, How does "Titebond II" differ, besides being water resistant? Does it have less tendency to creep under shear stress or soften with heat?

Anonymous

A *From Dale Zimmerman*

Dale Zimmerman is a Technical Service Representative in Construction Adhesives and Sealants with Franklin International of Columbus, Ohio.

The methods involved in making Franklin Hide Glue usable without heating do, indeed, make it slightly less brittle than traditional hot hide products. Even though it may be slightly softer, its strength still exceeds that of the wood on which it is used, and the difference in hardness produces essentially no difference in the damping of sound. When Franklin Hide Glue is used to bond hard maple, it produces wood failure over most of the surface after an overnight cure. This is an indication that, despite a slight difference in hardness, Franklin Hide Glue gives the same joint strength as could be achieved using a hot hide product.

And part II of the answer: Franklin Titebond II differs from Titebond Wood Glue chiefly in its greatly improved water resistance. The cross-linking which provides better water resistance also improves resistance to cold creep and heat resistance slightly, but the products are still quite similar in these areas. Titebond II also has a slightly higher chalk point than Titebond Wood Glue. This means that, to be successful, joints formed with Titebond II need to dry a minimum of 55° F., while Titebond Wood Glue can bond effectively at a slightly lower temperature.

Q A Broken Tuning Pin?

I recently had the unpleasant experience of having a tuning pin break off in an upright piano I was tuning. The trouble is, it broke off flush with the plate so I had nothing to grab to try to get it out. I'm afraid to try drilling it and using a screw extractor, since I've had trouble with those breaking off in the past, and this pin was so tight I'm sure it wouldn't budge. Any suggestions?

Anonymous

A *From Bill Spurlock*

Bill Spurlock is a Registered Piano Technician and the owner of Spurlock Specialty Tools in Vacaville, California.

Here are two methods that have worked well for me in similar situations. First, a screw extractor will work if you first heat the broken portion of the pin to loosen it up. Proceed as follows: Center punch the broken end of the tuning pin (carefully to avoid driving it in further). Then drill a 5/32" hole at least 1/2" deep into the pin, keeping it well centered. By the way, as you start to drill, if you see the bit going off center, just lean it to aim back toward the center, then gradually straighten it up again. This way you can steer the drill until it gets started correctly.

Next, tap a short piece of 5/32" rod into the hole in the pin. A replacement pedal pin will work well here. The next part is tricky: you need to apply enough heat to the pin to loosen it somewhat, without overdoing it and damaging the block. A moderate amount of heat quickly loosens any metal part that's stuck in wood, but you have to take a little time to allow the heat to travel to the bottom of the pin. A small high temperature torch (see PT Journal, July '93, page 9) works well because you can direct the heat precisely at the rod until a drop of water sizzles on the broken end of the pin. Then wait two or three minutes for the heat to dissipate from the pin, remove the rod and carefully try the screw extractor.

A note on using screw extractors: These tools are by nature very hard and brittle, and being smaller than the item to be removed, are not as strong. If a screw or pin broke off because it was too tight, a screw extractor should never be used to try to remove it unless something is first done to loosen the part. Always use the largest screw extractor that will fit the hole, and don't press your luck!

If the pin does not come out, repeat the heating procedure using the pedal rod and try again. The advantage of this method is that it leaves no visible scars on the piano. A second method is to drill through the back of the piano to (hopefully) intersect the bottom of

the tuning pin hole, and drive the broken pin out the front. This method requires some very careful measurement, and plugging the hole in the piano's back when you're done. Use a 1/2" or 5/8" Forstner bit, to avoid chipping the back of the piano as the bit enters.

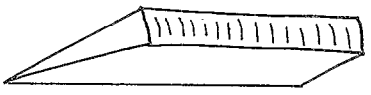
Locate the correct point of entry and drilling angle by drawing a full scale diagram. The horizontal location is just done by measuring from the pin to one side of the piano. The vertical position is complicated by the angle of the pin. To measure this angle, slip a long tuning tip onto another tuning pin in the area, and use a square off the top of the pinblock to trace the tuning tip's angle from horizontal onto some thick paper. Use that angle to extend the tuning pin location to the back of the piano on your full scale drawing. This will tell you the correct vertical position to begin your drilling. Hang the square over the back of the piano, and use your thick paper angle tracing as a drilling guide, holding it alongside your bit to keep it on course. If luck is with you, you should intersect the back of the tuning pin hole and can use a slender punch or hard steel rod to drive out the broken pin. If your location is off, you can always enlarge the hole—you'll just have a bigger one to plug! This method is always available if you do break off a screw extractor. Good Luck!

T&T A Tool For Shining Up Key Pins

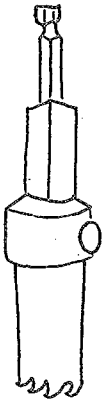
Ace hardware sells hole saws that have a removable 1/4" bit as a pilot. Buy a 5/8" hole saw and replace the bit with a 5/32" bit sold for use with small electric screwdrivers (Black & Decker makes one).

Now take a slab of scrap hammer felt sold from supply houses and, using a drill press, make some felt plugs.

Remove the drill bit and replace it with a screw driver bit also sold for the electric screw drivers. Douse the felt plug with your favorite metal polish, put the hole saw in the drill and start shining.

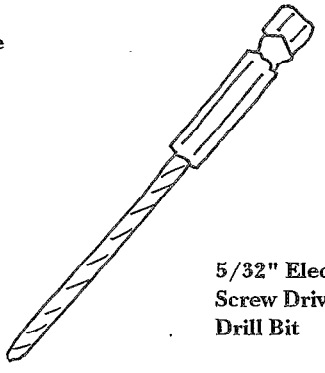


Hammer Felt



Screw Driver Bit

Hole Saw



5/32" Electric Screw Driver Drill Bit

T&T Hey, I Like My Case!

Has everyone seen my new tool case? Even the great Jim Harvey—"Mr. Tool Case" himself—admitted it is pretty cool! Seriously, after a series of attache-type cases, none of which was ever quite satisfactory, (but look very professional), I had an inspiration to adapt a camcorder case. This is the rectangular, upright type, about 16" x 8" x 10" high with side pockets which close with velcro. I built 3 tool trays which sit on top of each other with a layer of plastic small-parts boxes below. The fold-back top has pliers and scissors inside attached with elastic bands. All tuning tools are in the top tray and may be set on the piano. The side pockets hold a variety of things such as glue, center pin lube, etc.

The best things about this case I discovered after I started using it I will pass on to you:

1. It only cost $39.00 (labor excluded)
2. The case only weighs 2 lbs. and only 14.5 lbs. with tools.
3. Everything (except the pliers) stays in the same position at all times—in the car, while being carried, while in use. There are no surprises such as tools which have fallen out of their pockets or leaking glue. Superglue spouts seem to have less tendency to clog up when in an upright position.

David Duncan

T&T Quick Touch-Up for Buzzing Damper Felts

Many pianos have a bad case of buzzing dampers caused by dirt build-up on the surface. Sometimes, the expense of replacing these felts is not justified. A simple solution to the problem is to lightly brush the surface of the felt with an old toothbrush. This tool is cheap, easy to carry, and will not grab the felt like sandpaper will.

T&T Damper Sockets Assist in Pulling Baldwin Spinet Actions

Before pulling a Baldwin Spinet Action that has wooden drop lifters with guide pins going through a bushed rail, the rail must be secured to some of the stickers. Otherwise, all of the guide pins will fall out of the rail and reinserting them later will be almost impossible. By first securing a few of the stickers to the rail, the action and rail can be removed together with no danger of the rail coming off the pins.

A quick and reliable way to secure the rail to the stickers is to attach damper sockets (small brass sleeves with set screws) to the guide pins of four stickers, one at each

"The Baldwin piano has a rich, warm sound; the tone quality is incomparable... a truly elegant instrument in every way."

Marian McPartland

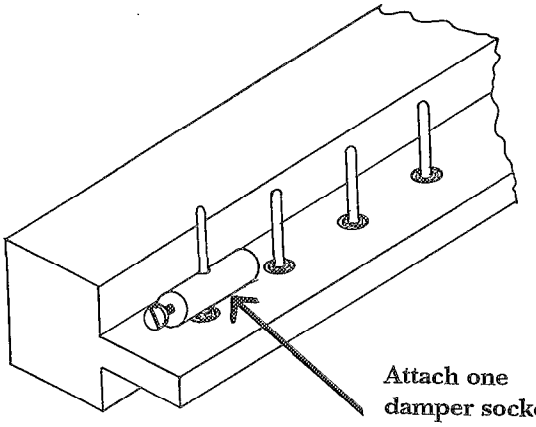
"Tuning and servicing the Baldwin pianos for Marian McPartland and her guests on the weekly radio show is especially rewarding because my efforts have a direct result on the performance and music itself. It has been my goal to inspire pianists in their creativity by providing them with perfectly tuned pianos that are voiced to their individual preferences. The new Baldwin pianos enable me to achieve that goal."

Ingo Hoffman
Concert Technician

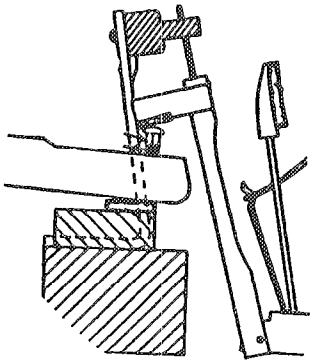
Baldwin . . . *Leading the way through research.*

action bracket. One at a time, lift each of the four stickers up as high as possible, then slide a damper socket over its guide pin and down snug against the rail. Tighten the set screw. Then remove the screws holding the guide rail to its metal brackets, remove the action nuts, and lift out the action/rail assembly.

The four damper sockets can be strung onto a safety pin as a handy means of carrying in the tool kit.



Attach one damper socket at each action bracket



TT&T Shop Tips

- When working with keys (notching new key tops, polishing, etc.) put carpeting or other shock absorbing material on the floor, so that if (when) one should happen to slip out of your hands and dropon the floor, new damage will be avoided or minimal.

- A good cordless drill is a tool that will be used many times a day. Keep a 3/8" one with a 9.6V battery and a fast (one hour) charger. A spare battery is a must and a keyless chuck is handy. Look for a drill that feels good in your hand, reverses easily and logically, and is solidly made

TT&T Caring For Sandpaper Files

Sandpaper files should not be put in a tool box without being protected with either a cardboard sheath or a piece of scrap leather. If the files bang around in the tool box they will soon become dull and not do as good of a job as the should. This also goes for metal files. Metal files should not touch each other.

Bill Smith, RPT

PACE

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LESSON PLAN

Technical Lesson #10

Vertical Regulation

Choosing Hammer Blow & Key Dip Settings

By Bill Spurlock, RPT
Sacramento Valley Chapter

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

In brief

This lesson will explore the relationship between key dip, hammer blow distance, and aftertouch in the vertical action. Participants will test various settings of key dip and hammer blow distance on action models, or on sample notes of a piano, and note the effect upon aftertouch and reliability of hammer checking.

Getting started:

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

Hands-on session setup:

To teach this lesson in a hands-on format, you will need one or more direct blow vertical pianos in good condition. Used pianos in a dealership or practice room pianos at a college are good candidates, as long as they have only light wear. Ideally, parts alignment as covered in lessons #8 and 9 should have been performed. Alternatively, action models can be used.

Additionally, meeting set-up should include:

- Extra regulating tools
- Extra hammer scrap felt (for making hammer rail support blocks).

Estimated lesson time:

One to two hours, depending upon the number of participants.

Tools & materials participants must bring:

For this lesson, participants should obtain the following tools:

- universal tool handle
- flange screw driver blade
- capstan adjusting tools, for both square and hole types
- let-off adjuster
- 6" steel rule, graduated in millimeters and inches (inch side should be graduated in 32ths, not 64ths, for ease of reading.)
- hammer scrap felt (for making hammer rail support blocks), knife or razor blade, and glue
- universal wire tool

Assigned prior reading for participants:

PTG Technical Exam Source Book (PTG Home Office, 816-753-7747), pages III.3 through III.6, and the PTG Piano Action Handbook—third edition (1991)

General instructions:

Aftertouch is that part of the cycle of motion of action parts which occurs after the jack disengages from the hammer butt. By depressing a key very slowly, aftertouch can be observed in the various action parts: In the *key*, aftertouch can be felt as a release or slipping past a tight spot near the bottom of its travel. In the *wippen*, aftertouch can be seen as continued lifting after the jack begins to trip. In the *jack*, aftertouch can be seen as continued rotation out from under the hammer butt after the jack first trips away from the butt felt. And in the *hammer*, aftertouch is evident as the hammer falls back toward the rail slightly after reaching the let-off point.

This "extra" parts travel after the onset of jack escapement is necessary to ensure the jack completely disengages from the hammer butt, so it will not interfere as the hammer rebounds from the string. For the pianist, the extra key travel provides a zone — rather than a fixed point — at the bottom of the key stroke in which the pianist can end the key movement and still make the note play properly. Technically, the key only needs to depress until the jack disengages from the hammer butt, and no further; however such an exact key dip leaves no "cushion" or margin for error in the key stroke. A slightly incomplete stroke (such as when attempting to play very softly) would not trip the jack adequately and the hammer would bobble between the jack top and the string. So, aftertouch allows the pianist to achieve

complete jack escapement regardless of playing force.

How much aftertouch should there be? Answer: enough to lift the wippen sufficiently to push the jack far enough against the regulating button to cause the jack to rotate out from under the hammer butt, even during the softest playing. (On a soft blow, key dip is slightly less because the front rail punching is not compressed as much as with a harder blow. Therefore the wippen travel is also less, and the jack does not rotate or trip as far out from under the hammer butt as it would during a harder blow.) On the other hand, additional aftertouch-beyond that required for adequate jack escapement during soft playing-causes the jack to trip farther away from the hammer butt than necessary. This slows repetition because the jack has farther to travel to get back under the hammer butt to play a repeat blow.

Thus, a convenient way to evaluate "aftertouch" in a vertical piano is to look at the amount of jack escapement — how far the jack top trips away from the hammer butt leather. See figure 1. Several adjustments in the action affect the amount of jack escapement. These are

Adjustments in the action: *See Figure 1 below*

• key dip, because dip determines the amount of wippen lift, and therefore the amount of jack rotation.

• hammer blow distance, because the available wippen lift must push the hammer to the let-off point, then continue to rotate the jack out from under the butt. Increasing the blow distance (lowering the capstan) requires the wippen to begin its travel at a lower point, causing it to end its travel at a lower point also, thus reducing the amount of jack rotation.

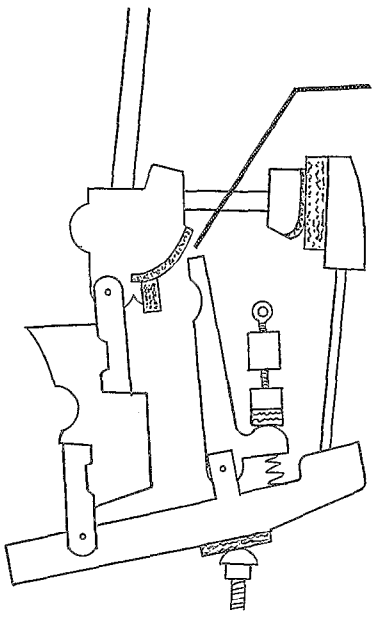
• lost motion, since some of the available wippen travel must be used to take up any lost motion before the hammer can begin to move.

• let-off distance, since this setting determines the point in the wippen travel in which the jack begins to trip. For example, increasing the let-off is done by lowering the regulating button, causing it to contact the jack rotation.

• checking, since for a given jack position at the end of a key stroke, the distance between the jack top and the butt leather (amount of jack escapement) depends upon the position of the hammer butt. If the hammer checks close to the strings, the butt will be further forward, away from the jack top. If the hammer checks farther from the strings the butt leather will be closer to the jack top.

Some of these adjustments have fairly standard settings, almost universal among all vertical pianos. These are let-off of 1/8", checking of 1/2" to 5/8" and minimal lost motion (just enough to allow the jack to return under the hammer butt when the key is released very slowly.) This leaves key dip and hammer blow distance as our main variables. *The correct measurements for dip and blow on any action can be derived by testing different settings on sample notes until the correct amount of jack escapement is achieved. For a piano in good condition in otherwise good regulation, the correct setting of these two adjustments is critical to optimum repetition and reliable checking (no tendency toward bobbling hammers.)*

It is the ratio of key dip to hammer blow distance that determines the amount of jack escapement. For example, a key dip of 5/16" paired with a blow distance of 1 1/2" might result in the same amount of jack escapement as a dip of 3/8" and a



Proper aftertouch indicated by clearance between jack top and hammer butt leather, when hammer is in check after a medium blow. (Assuming checking distance, let-off, and lost motion are correct)

blow of 1 3/4" on the same action. However, since the key is the one part of the action that the pianist feels, key dip should be kept within a "normal" range for a given type of piano. Thus, when evaluating blow and dip dimensions for a given action, you should use manufacturer' specifications for key dip as a starting point when available, and rely more on altering the hammer blow distance to obtain the correct jack escapement.

Check manufacturer's service manuals, or the PTG Piano Action Handbook, for regulation specifications for specific models. Some typical key dip specifications are:

- 7/16" — most spinets and some consoles with very short keys.
- 3/8" to 13/32" — most American-made consoles and larger verticals.
- 10 to 10.5mm — most European and Asian verticals.

Exercises: The following exercises will demonstrate the effect of the various regulation adjustments on jack escapement. They can be performed on action models or on sample notes of a studio or larger piano (one note per person).

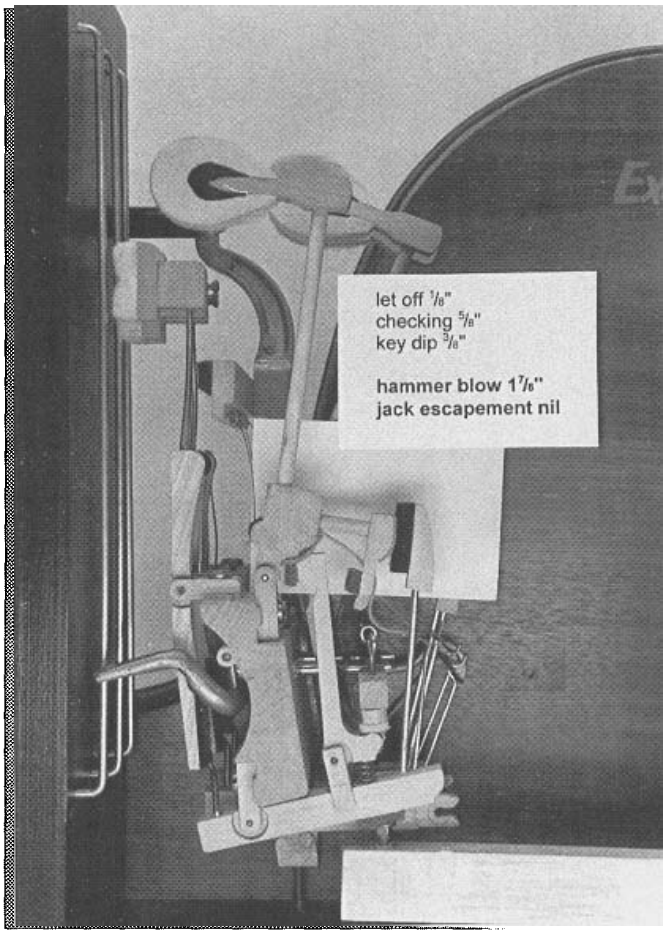


Photo 1: **Example I**

1. Adjust let-off to 1/8"

2. Adjust the hammer rail position to give a blow distance of 2"

3. Adjust capstans to leave just enough lost motion so that the jack will return fully under the hammer butt when tripped and released slowly.

4. Set key dip to the manufacturer's specification. If unavailable, choose a key dip from the typical specifications listed above.

5. Adjust the backcheck wire so the hammer checks 5/8" from the strings when played with a medium-to-hard blow.

6. Evaluate the jack escapement: Play the note with a medium blow. Does the hammer check, or does it bobble? On most pianos, these settings will result in inadequate jack escapement, causing the hammer to bobble because the blow is too great in proportion to the key dip. Holding the key down, position the hammer 5/8" from the string (if it did not already check there) and look at the top of the jack. Is it resting against the butt leather as shown in photo 1? Did the butt have to push the jack out of the way as it came back into the checking position? Repeat these checks using a soft blow—the situation will now be worse because key dip (and therefore jack escapement) will be slightly less.

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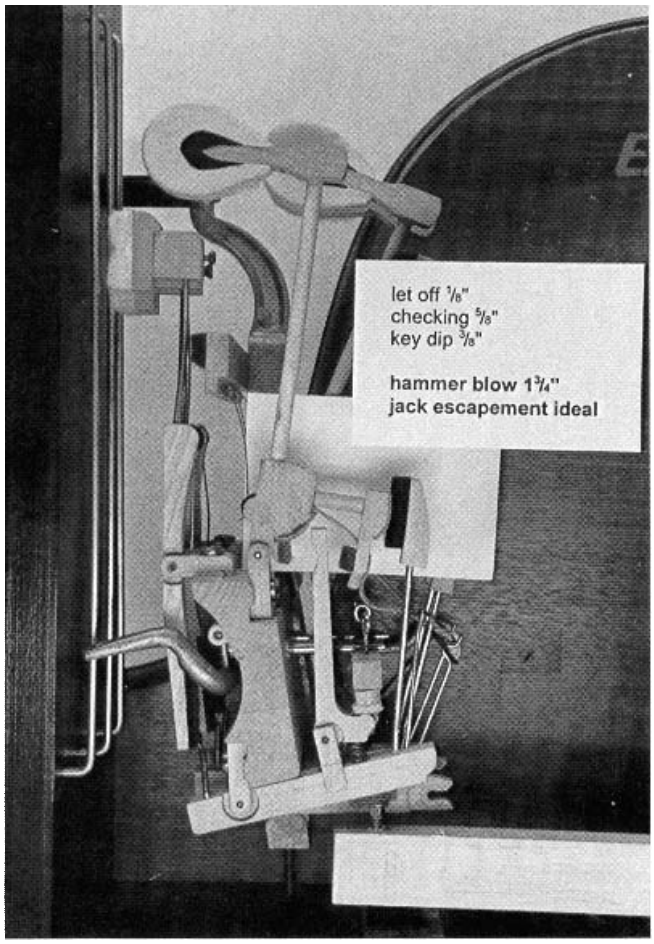

photo 2: **Example II**

1. Prop up the hammer rail to reduce blow distance to 1 3/4".

2. Adjust lost motion as in example 1.

3. Re-adjust checking to 5/8".

4. Evaluate the jack escapement as in example 1. Escapement should now be greater with this shorter hammer blow.

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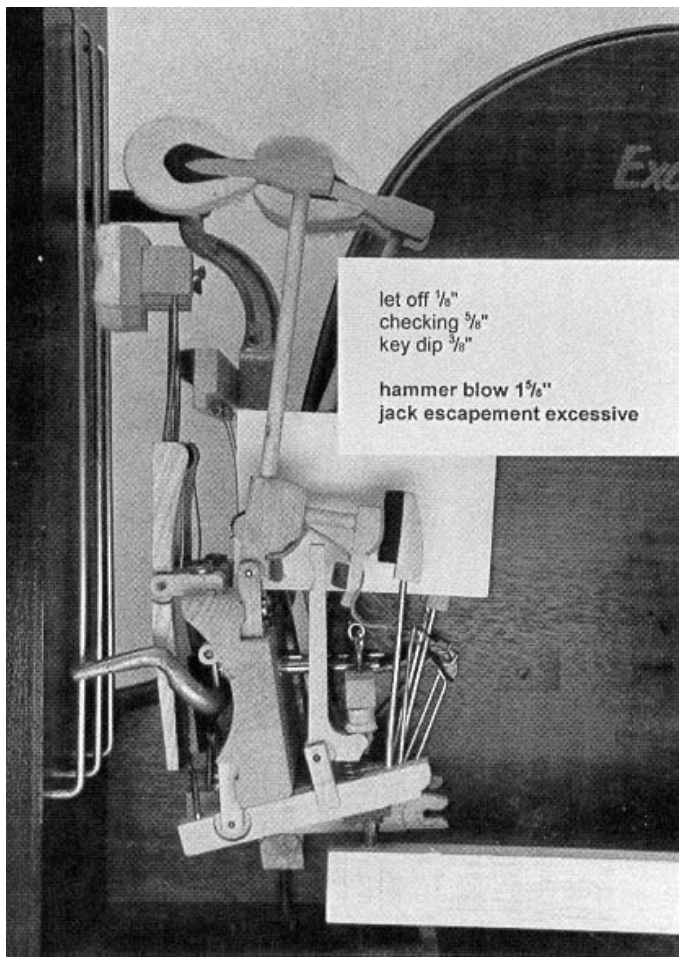


photo 3: **Example III**

1. Reduce the blow distance to 1 1/2".

2. Adjust lost motion.

3. Adjust checking to 5/8".

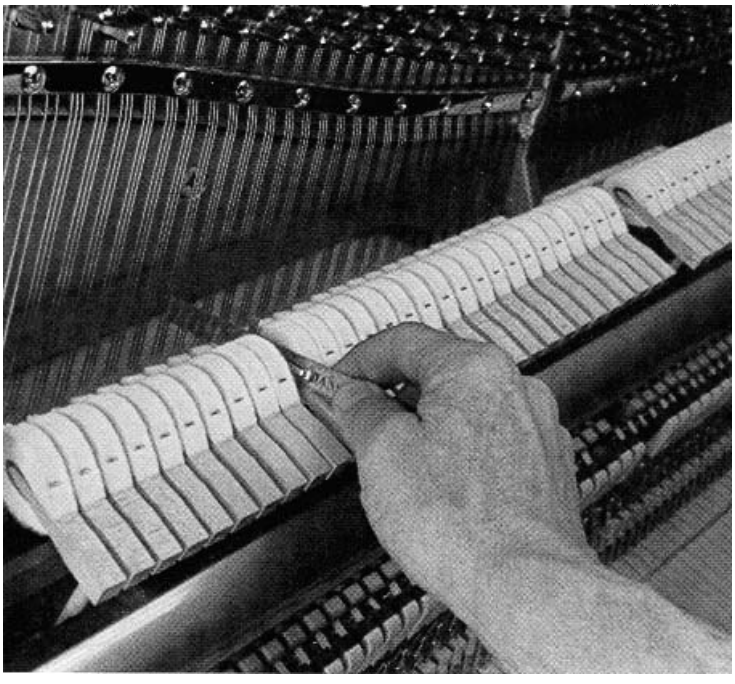
4. Evaluate jack escapement. It may now be excessive (more than 3/16").

Example IV

1. Continue trying other dimensions until jack escapement is correct. Ideally, the jack top should be 1/16" to 1/8" away from the butt leather with the hammer in check after a medium blow. Most importantly, there should be no tendency for the hammer to bobble on a soft blow. On a medium to hard blow, jack escapement should not exceed 3/16".

2. Now try increasing the key dip, and resetting the checking to 5/8". Note that jack escapement increases. Then try decreasing key dip, noting that this decreases escapement.

Returning to the regulation sequence begun in Lesson #8, once all parts are aligned, the tests above can be used to determine appropriate settings for key dip and hammer blow for a given piano. Although specifications may be available from the manufacturer, the escapement test should be used to confirm them. Worn parts, design changes, or manufacturing variations can all cause the book specifications to give a less-than-optimum result. And for the older piano where no published specifications are available, the escapement test allows the action to tell you how to best regulate it.



Photos 4 (above) & photo 5 (left)

Once the correct blow distance is determined using two or three sample notes on a piano, adjust the hammer rail permanently to the correct blow by gluing firm material (hammer scrap felt, leather, or firm bushing cloth) in place for hammer rail supports. If the hammer blow distance is uneven across the scale, you can insert strips of bushing cloth or card stock behind the hammer rail cloth where necessary.

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Tuning Lesson #10

Tuning Just Fifths and Fourths - Part 1

The Basic Skills

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

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

In brief

This lesson is the first of several dealing primarily with tuning just or pure fifths and fourths. The goal of this lesson is to practice the principal aural tuning tests for fifths and fourths, and to provide further ear-training practice in tuning intervals just. Participants will practice tuning and checking 3:2 perfect fifths (P5s) and 4:3 perfect fourths (P4s). Following the instructor's introduction and demonstration of the tests, each participant will tune fifths and fourths up and down from a single note in the temperament range (two each P5s and P4s), striving for pure, beatless intervals and clean unisons. In each case, participants will then analyze the resulting two octaves, first by just listening to the octave sound, and then by using the principal octave tests from lessons 7-9.

Chapter meeting set-up

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

Tools & materials participants must bring

Tuning hammer and mutes, Coleman Beat Locator.

Home study assignment for participants

Read Michael Kimbell's article "Interplay of Intervals", *PTJ* 3/94, pp. 21-26, paying special attention to P5s and P4s.

Using your Coleman Beat Locator on your practice piano, see if you can locate the coincident partials for all the P5s and P4s around middle C. Strip mute the midrange, and tune all possible P5s and P4s (two of each) both up and down from middle C as beatless intervals. As you tune the P5s, can you hear beats at the 3:2 level as well as the faster beats an octave higher at the 6:4 level? The faster-beating 6:4 P5 partials can be misleading in temperament and midrange tuning. Use the aural focusing technique (see PACE Tuning Lesson #5) to help you tune the P5s pure at the 3:2 level, and the P4s pure at the 4:3 level. Practice using the principal tests for P5s and P4s, as follows:

Using the M6-M10 test for the 3:2 P5, C4-G4

1. Tune the C4 unison until it's clean and solid, and mute G4 and test note D#3 to single strings. Make sure the M6, D#3-C4 is beating on the wide side of pure at a comfortable rate.
2. Tune G4 to C4 as a beatless perfect fifth, playing both notes together and aurally focusing on G5.
3. Compare the beat rate of the M6, D#3-C4, with that of the M10, D#3-G4. If they are identical, and remain so after a test blow on G4, proceed to step 6. If not, go to step 4 or 5.
4. If the M6 is beating faster than the M10, you have a narrow P5. To obtain a just P5, you must raise G4 a tiny amount, then go to step 3.
5. If the M6 is beating slower than the M10, you have a wide P5. To obtain a just P5, you must lower G4 a tiny amount, then go to step 3.
6. Tune the G4 unison strings until clean and solid. Now try the M6-M10 test once again. If the beat rates are identical, you are finished. If not, recheck your unisons, and test again. If you still have a problem, start over.

Using the M3-M6 test for the 4:3 P4, C4-F4

1. Tune the C4 unison until it's clean and solid, and mute F4 and test note G#3 to single strings. Make sure the M3, G#3-C4 is beating on the wide side of pure at a comfortable rate.
2. Tune F4 to C4 as a beatless perfect fourth, playing both notes together and aurally focusing on C6.
3. Compare the beat rate of the M3, G#3-C4 with that of the M6, G#3-F4. If they are identical, and remain so after a test blow on F4, proceed to step 6. If not, go to step 4 or 5.
4. If the M3 is beating slower than the M6, you have a wide P4. To obtain a just P4, you must lower F4 a tiny amount, then go to step 3.
5. If the M3 is beating faster than the M6, you have a narrow P4. To obtain a just P4, you must raise F4 a tiny amount, then go to step 3.

6. Tune the F4 unison strings until clean and solid. Now try the M3-M6 test once again. If the beat rates are identical, you are finished. If not, recheck your unisons, and test again. If you still have a problem, start over.

General instructions

The instructor should first talk a little about the importance of clean-sounding fifths and fourths in tuning. Point out that although today's activity, tuning beatless 3:2 fifths and 4:3 fourths, would not often be appropriate in equal temperament tuning, it's good practice that teaches control as well as proper use of the M6-M10 test for fifths and the M3-M6 test for fourths. In addition, this is a skill that has direct application in tuning many historical temperaments.

Make sure everyone understands the M6-M10 and the M3-M6 tests. Using a Coleman Beat Locator and sample intervals on the piano, have a volunteer analyze all the test intervals involved, identifying the sample intervals' coincident partials, as well as the test intervals' coincident partials and test interval ratios. For example, looking at the P5, A3-E4, set up the Coleman Beat Locator to locate on the keyboard the coincidence of the 3:2 partial pair. Next, using the yellow slide only, show that the M6-M10 test note C3 has its fifth partial at that location. Then set up both slides to analyze in turn the test intervals, C3-A3 and C3-E4, noting the coincident partial location and interval ratios. In a similar way, pick a sample P4 to look at, and analyze the M3-M6 test. In each case, explain what test results mean in terms of narrow, pure, or wide P5s or P4s.

The actual tuning practice is straightforward. Each participant should tune the two pure fourths and two pure fifths from one note in the temperament range, in a similar manner to the instructions given for practicing the tests in the "Home Study" section above. To simplify matters somewhat, strip mute the entire midrange to single strings, pulling out the strip as needed for unison tuning.

Here's what each participant should do, in about ten minutes' total time: first, pick a temperament note, and tune the unison strings. Second, tune the P5s up and down from that note, using the M6-M10 test, and tune those unison strings, rechecking the P5s with the test. Third, tune the P4s up and down from the same note, using the M3-M6 test, and tune those unison strings, rechecking the P4s with the test. Last, play the two octaves, compare the sound of one to the other, and then analyze them using the principal octave tests described in Tuning Lessons 7-9 (2:1, 4:2 and 6:3 octave tests).

The instructor should get involved only if a participant has a question or seems to be getting bogged down. It is possible that not everyone will finish the entire lesson plan. However, everyone can benefit from the repetition of seeing others perform the tasks required.

Note: *Do you find these lesson plans valuable? Do you have specific suggestions for changes or clarification? Please direct any comments or suggestions to the author c/o the* **Journal**.

Side Notes 1 of PACE Tuning Lesson 10

Key and Interval Naming Conventions

Throughout the *PACE* Tuning Lessons, we employ certain conventions and abbreviations for naming keys and intervals. Though any appearance of numbers and mysterious abbreviations in tuning articles may at first look like "wedge-shaped cuneiform inscriptions," as one Associate put it, our goal is brevity and precision. To understand these articles, you need to understand the conventions below.

Naming Keys:

We will follow the common American convention of naming keys by the note name and octave number: we will name the lowest C on a standard piano keyboard as C1, and octave numbers will change at each C ascending, up to C8. We will refer to all black keys as sharps, never as flats, in spite of the incorrect interval note spelling this often produces. We will consider all keys down to one octave below C1 to be in octave zero, and will name the first three notes on a standard piano keyboard A0, A#0 and B0.

Naming Intervals: Abbreviations

We will usually use standard abbreviations to name intervals, as described below. If we wish to refer to a sample interval, we will also name the keys as above, separated by a hyphen, as in the following examples: "the P5, C4-G4" or "the M17, F2-A4".

Sometimes we will use the compound version of names of intervals whose notes are separated by a simple interval plus some multiple of octaves, where this seems appropriate or clarifies the more compact but less familiar abbreviation we prefer to use. Hence, referring to the chart below, we could abbreviate the name of the interval 31 semitones wide as either "P19" or a "D8v-P5," or write it out as "double octave-fifth."

Abbreviations:

U=unison	P=perfect
8v=octave	A=augmented
D=double	2=second
T=triple	3=third
Q= quadruple	4=fourth
m=minor	5=fifth
M=major	etc.

Abbreviated interval names by semitone width of interval:

		0	1	2	3	4	5	6	7	8	9	10	11	12
Simple		U	m2	M2	m3	M3	P4	A4	P5	m6	M6	m7	M7	8v
+8v	(12)		m9	M9	m10	M10	P11	A11	P12	m13	M13	m14	M14	D8v
+D8v	(24)		m16	M16	m17	M17	P18	A18	P19	m20	M20	m21	M21	T8v
+T8v	(36)		m23	M23	m24	M24	P25	A25	P26	m27	M27	m28	M28	Q8v

Naming Intervals by Ratio or Coincident Partial Pair Numbers

When necessary, we will use one of two conventions for specifying an interval by specific coincident partial pair. This is important with intervals that have more than one pair of coincident partials with audible beats. The first convention is to identify the coincident partials as a ratio of the partial number of the lower note to the partial number of the higher. The second is to identify the coincident partial pair number as a superscript in the interval name. If there is no superscript printed, we assume it is "1," indicating the first pair of coincident partials. A few examples will illustrate both conventions.

In a perfect fifth, the first pair of coincident partials is the third partial of the lower note and the second partial of the upper. The second pair is the sixth partial of the lower note and the fourth partial of the upper. The third pair is the ninth partial of the lower note and the sixth partial of the upper. According to the first convention above, we would name these: 3:2 P5, 6:4 P5 and 9:6 P5, respectively. According to the second convention above, we could also name these: P5, $P5^2$ and $P5^3$ respectively. We will use the first convention for clarity except in naming equal-beating test intervals for an interval test.

The second convention is handy for accurately naming interval tests. For example, we can use it to convey information about the named intervals in a triple octave test involving a M3 and a M24 as "the $M3^3$-M24 test." This states in compact form that we must focus on the 10:8 M3 partials (the third M3 pair, after 5:4 and 9:7) and the 10:1 M24 partials (the first M24 pair). Without being so specific, had we just named the test as the "M3-M24 test," we would have had to clarify that we are *not* comparing the 5:4 M3 to the 10:1 M24; such a comparison is like "apples-to-oranges" and would not be a valid test for an 8:1 triple octave. In addition, the test name with the superscript would warn us to listen for the correct M3 beats using the ghosting technique.

Sidenotes 2 For PACE Tuning Lesson 10

Move to Sidenotes 2
Creating Equal-Beating Interval Tests

We use a variety of tests in tuning. Among them are the equal-beating tests that employ a third auxiliary tone or test note. The test note must have a partial in common with both notes of the interval at the coincident partial level being tested. Examples of this type of test include the P5 and P4 tests featured in this lesson, and the octave tests in previous lessons. We play a test note alternately with each end of the interval being tested; the relative beat rates of the test intervals thus formed give us useful information on the tuning of the interval ratio, or coincident partial pair, being tested. If the test intervals are equal-beating, then we have tuned the interval just with respect to a particular ratio, or pair of coincident partials.

We can create a great variety of interval tests by keeping a few simple concepts in mind and applying a systematic approach. First, determine the ratio of the interval (a.k.a. the coincident partial level) you want to test for. Second, locate the coincident partials at that level for a sample of the interval. Third, list the possible test notes for the sample interval. Again, possible test notes are limited to those notes with a partial at the coincident partial location of the interval. Fourth, name the test intervals created, and identify their interval ratios.

The problem is not coming up with tests, but rather eliminating the ones that are not particularly useful. First, we eliminate the interval notes themselves as test note candidates. Then we can usually eliminate from consideration the slow-beating and/or very faint tests. In most cases, if you look at the note with its fifth partial at the coincident partial location of the interval, you will have found the best test note.

The example to the left will illustrate the process. Assume we want to list the tests for the 3:2 P5, C4-G4, which has its coincident partials at G5. First, we list the possible test notes with partials at G5 that are not interval notes C4 or G4. Then we look at the test intervals created between the test note and the interval notes. At this point we can usually eliminate ones that beat too slowly to be useful, or require ghosting to hear correctly. We can easily see from this information that the best test for a 3:2 P5 is the M6-M10, a fifth partial test. We can also see that the m3-M3 test for the P5 does not appear here. The reason is that it is not a 3:2 P5 test, but rather a 6:4 P5 test, which is not particularly useful in the midrange.

Test Notes and Intervals for the 3:2 P5, C4-G4

Note	Partial at G5	Test Intervals & Ratios		Comments
G5	1	P12-8ve;	3:1, 2:1	Slow
G3	4	$P4\text{-}8ve^2$;	4:3, 4:2	Slow
D#3	5	M6-M10;	5:3, 5:2	Good
C3	6	$8ve^3\text{-}P12^2$;	6:3, 6:2	Slow
A2	7	m10-m14;	7:3, 7:2	Fast
G2	8	$P11\text{-}D8ve^2$;	8:3, 8:2	Hard to hear
F2	9	$P12^3\text{-}M16$;	9:3, 9:2	Hard to hear
D#2	10	$M13\text{-}M17^2$;	10:3, 10:2	Hard to hear

As an exercise, you might want to use a similar procedure and see how many tests you can come up with for a 10:5 octave at say, C1-C2, and then try them in the bass section of a large grand. Remember to use the ghosting technique if needed.

NAMM Show '94

Part 2—Review of the 1994 NAMM Show *by Yat-Lam Hong*

Part 1 of this article appeared in the May 1994 issue of the Piano Technicians Journal.

Charles R. Walter's 35 employees turn out about 1,300 pianos a year. They make a 43" console and a 45" studio. They're identical pianos, except that the 45" has bigger castors. Mr. Walter heads this Christian-oriented business in Elkhart, Indiana, and takes great pride in the fact that it's totally family-owned. "We have no bank debts," he said. Working with him in the business are his wife Barbara, son Kevin, and three sons-in-law, Virgil Wesco, Richard Counsellor, and Stephen DeMercurio. His daughter, Rachel, works in sales and invoicing. His oldest grandson was helping giving out brochures at NAMM.

Although basically one model, Walter's vertical pianos are available in six furniture styles (Traditional, French Provincial, Italian Provincial, Queen Anne, Country Classic, and The Riviera) and six finishes (walnut, cherry, oak, mahogany, pecan, and ebony). The piano legs are solid wood, with veneer over five-ply lumber core for the rest of the case. Other than the Langer action and keyboard and Japanese tuning pins, everything in a Walter piano is American-made, a fact Walter is so proud of that its magazine ads are frequently lined with images of the Liberty Bell and Star-Spangled Banner—all under the heading, "Let Freedom Ring." Seeing a patriotic ad like this, one could almost hear the drum beat of the marching band in a July Fourth parade.

At one of the PTG Conventions a few years ago, Walter exhibited a grand piano. This was the prototype of the 6'3" grand that has finally gone into production, incorporating the latest refinements. So far, Walter has made six units. This piano has Renner action and hammers, Kluge keyboard, solid spruce soundboard, maple inner and outer rims, and maple bracing. It also uses vertical grooved hitch pins. (See photo 4). By driving these hitch pins to variable depths as needed, the down-bearing is easily adjustable during the manufacturing process. The strings go in the grooves, which should simplify string replacement.

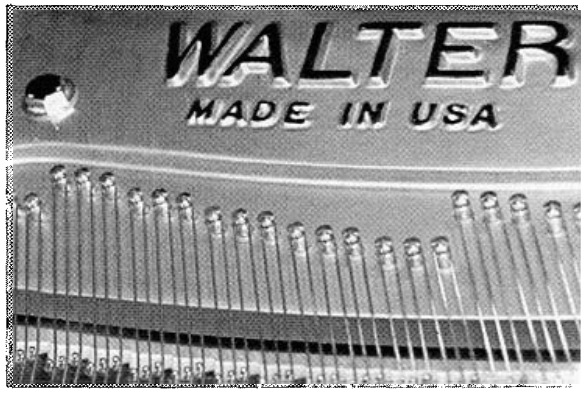


Photo 4

I asked Mr. Walter why he wanted to build a grand piano when there are so many other grands already on the market. His answer was straightforward: "America needs a *good* 6' 3" grand, and ours is it." I appreciate Mr. Walter's confidence, without which it would be difficult to succeed in business—or any other field.

As usual, there were foreign companies who were first-time exhibitors at NAMM. Among them were Fritz Dobbert (Brazil), Kemble (England), Rieger-Kloss (Czech Republic), and Dongbei (China). What made these companies want to exhibit their pianos in the United States? The responses I got were surprisingly similar. They see the U.S. as a market with great potentials because of its stable political climate, a recovering economy, low inflation rate, low unemployment, and a population with much disposable income and leisure time—in short, the ideal piano customers, assuming that TV, stereo, boats, recreational vehicles . . . haven't gotten to them first. These companies also realize they may be a bit late trying to break into this market, but they realize that they have to "start somewhere."

Fritz Dobbert pianos are made by Pianofatura Paulista S.A. of São Paulo, Brazil. Marcelo Pereira, director, and Célio E. Bottura, Jr., administrative director, said this privately owned company was founded in 1950. Its 170 employees produce about 1,500 pianos a year in its 27,000 square meter plant. The six vertical models range from 44" to 50", and it also makes two grand models (5'4" and 6'), producing fewer than 100 a year.

Pereira said most Americans are not familiar with the Fritz Dobbert brand, because 90% of the company's production is for domestic consumption, and the remaining 10% is exported to Italy and the rest of South America. Dobbert is the largest of the three Brazilian piano makers. Its pianos are built to German standards, he said, and Klaus Fenner, German scale designer, has helped with some of its designs. Dobbert faces competition back home from German, Japanese, and Korean pianos, but it's introducing the PianoDisc system to Brazil.

Rieger-Kloss pianos are made

in Jihlava, about 70 miles southeast of Prague. The company used to be a part of Petrof, but is now separate and privately owned. Founded in 1871, it currently employs 80 people and puts out 4,000 verticals a year. (It doesn't make grands.) All its pianos are for export, because "the Czechs can't afford them," said Martina Schramlova, company representative. Designed by Rieger-Kloss's own engineers, these pianos use German actions, hammers, and strings. "They are hand-made," said Schramlova. "And each one is a work of art."

Dongbei Piano Company was also at NAMM for the first time. This is the only one of the four major Chinese piano manufacturers that I have not yet visited. Their presence gave me an opportunity to get acquainted with its officials. Not fluent in English, they were glad to meet someone who could speak Chinese. I had a good talk with Mr. Tai Jin-Ming, the company president.

Dongbei (meaning "northeast" in Chinese) is located in Yinkou in the extreme northeast part of China, only about 100 miles from the North Korea border. This 41-year-old company has a 300,000-square-meter plant. Its 2,000 employees now produce around 15,000 pianos a year, but its maximum capacity is 30,000. Most of its products are the three models of vertical pianos: Prince, Princess, and Nordiska. It also makes a 5' 6" grand, but, due to low demand, it's made only to order. About 70% of its products are for the domestic market. The rest are for Europe, southeast Asia, and now, the company hopes, the U.S.

Mr. Tai is particularly proud of his top-of-the-line Nordiska pianos. Before Dongbei bought Nordiska, it sent some 40 technicians to Sweden to learn everything they could about how a western piano company operates. After they learned the business, the entire factory was disassembled, shipped to Yinkou, and re-assembled there. Although made in China now, the Nordiska pianos are made with European technology, European machinery, and by European-trained technicians. "In essence, the Nordiska is a European piano," Mr. Tai said.

He also told me that, thanks to inflation and a booming economy, the "Iron Rice Bowl" has cracked "right in half." This was the communist government's promise to the people that nobody would go hungry in China. The policy also assures a certain equality in pay. It's comparable to the French King Henri IV's pledge of "a chicken in every pot," that is, prosperity for all. The problem with Iron Rice Bowl is that everyone gets about the same pay for his kind of work. If he works extra hard, he won't get any more; but if he does only the bare minimum to get by, he won't get any less either. The system has taken away a worker's incentive to be productive and efficient, and his drive to excel. It has also produced a citizenry that is indifferent to what it does, because "the government will provide."

Well, the government still provides, but the amount is not enough to live on any more. (There're no automatic cost-of-living adjustments there.) To make up the difference needed for a comfortable living, the workers have to depend on the "bonus," which is strictly based on the quality and productivity of one's work. It has turned many Chinese into "go-getters," and often their bonuses exceed their salaries, which are still guaranteed by the government. The change, according to Mr. Tai, has produced a new breed of workers who care about their jobs and want to excel in them, because they want to live well. As a result, the quality of the pianos, like many other things, has improved tremendously in recent years, and it shows.

Having seen most of the pianos there, I must admit that Chinese pianos are not the worst ones at NAMM any more. This dubious honor now belongs to pianos produced in the various republics of the former Soviet Union.: Russia, Ukraine, Byelorussia, etc. (Please understand that, like everything else in this report, this is strictly the opinion of the writer, not that of PTG or the Journal. It may not be polite, but sometimes these things need to be said.)

As rough as they are, these pianos have already been worked over, according to Willem Hoff, president of Profabis Trading of Roden, Holland, which imports some of these pianos. When these pianos arrive in Holland, Hoff's technicians go over the regulation, voicing, tuning and whatever the former Soviets didn't do right the first time. His 12 technicians go through 5,000 pianos a year. "To build everything from scratch in Holland would make the cost prohibitive," he said.

These pianos have one major advantage over almost every other piano on the market: a price so low that it'd be hard to beat. Hoff openly admitted that these pianos are meant for the "low-end" market, and as such, they have their place. They're meant for customers for whom the alternative is not a better piano, but no piano at all. Anything costing much more would be beyond their price range. Furthermore, these pianos keep a lot of people in Ukraine, Holland, and elsewhere employed.

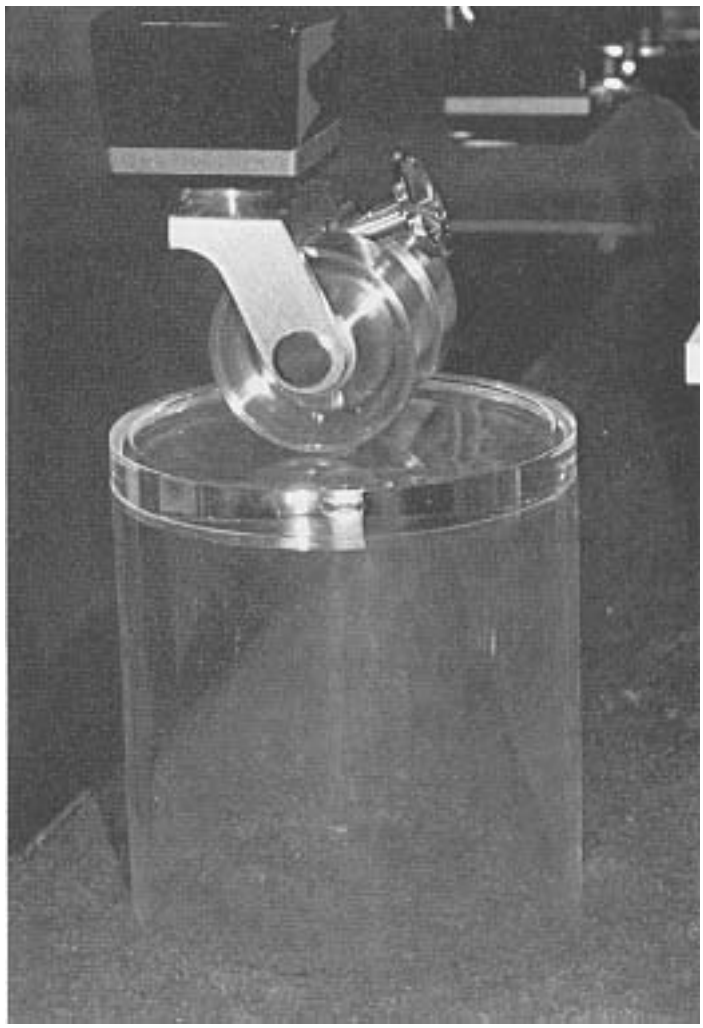
Here's an example of a joint venture. With the global economy we're in, such a practice should not surprise anyone. There are others. For example, the Boston is an American/Japanese product, where the piano is designed by Steinway of New York, built by Kawai of Japan, and sold through Steinway dealers in the U.S. The Nakamichi is a Korean/Japanese piano, where the strung back, case, and keyboard are made in Korea and shipped to Japan, where the action and hammers are installed and the piano is completed. The Nakamichi is half-Korean and half-Japanese, and the price is about halfway between typical Korean and Japanese pianos, too. In a less formal way, technicians have engaged in their own "joint ventures" for a long time. We use parts made by various foreign manufacturers in our rebuilding work whenever we find the quality or price of domestic parts unacceptable.

I must mention the piano that impressed me the most at NAMM: the Fazioli from Italy. Located in Sacile, about 40 miles northeast of Venice, this very small (1,500 square meters) company makes the largest piano in the world: a 10' 2" concert grand. The company was started 12 years ago by Paolo Fazioli, a mild-manner gentleman with

a simple, but grand vision: to build the best piano in the world, regardless of what it takes. The company now has 18 employees, and makes about 60 grands a year. (Fazioli doesn't make verticals.) Altogether, it has made only 500 pianos. An instrument of connoisseurs, this piano has won the approval of such well-known artists as Alfred Brendel, Vladimir Ashkenazy, Martha Argerich, Nikita Magaloff, Aldo Ciccolini, and many others. No piano could win the endorsement of pianists of this calibre without having something special to offer.

Fazioli pianos uses Renner action, Kluge keyboard, and Abel hammers—all made to Fazioli's specifications. The keyboard uses Ivoplastic for key-tops and ebony wood for sharps. Fazioli makes six sizes of grands: 5' 1", 6', 7', 7' 6", 9' 2", and 10' 2". "One of the things that give our pianos its distinctive sound is the wood we use for soundboards," said Heiner Sanwald, Fazioli's head technician. "We use only red spruce from Italy's Fiemme Valley, the same kind of wood used to make Stradivarius violins." Not only that, but according to Sanwald, every piece of wood used in a Fazioli is *listened to* before it goes in the piano. This is done by tapping the boards, and Fazioli's technicians know what to listen for. If a board didn't "sound right," it'd be rejected. That makes the entire piano, not just the soundboard, resonant, he said.

Weighing 1,518 lbs., Fazioli's monstrous 10' 2" concert grand is always a conversation piece. The curved back lid alone weighs so much that it's made in three sections, each with its own long-and-short lid props. The lid could be opened with the front third on the long lid prop, middle third closed, and back third on the short lid prop, for example. Imagine the possible combinations, and each combination produces a different way sound is deflected from the instrument. So far, there are only 20 such pianos in the world. The one I've seen was at the 1989 IAPBT Convention in Kyoto, Japan. It was hard even to get close to that piano, because the crowd around it was always so big, and hundreds of photos were taken of it there.



The tone of this instrument could be described in one word: magnificent. It also had a fourth pedal, which is available as an option on the other models, too. (The function of this pedal escapes me at the moment. My apologies.) Like its tone, Fazioli's price is also magnificent, but there's no shortage of customers. Currently, the waiting list is four to five months. If you want it in walnut, the wait is even longer, Sanwald said.

The largest of the several Faziolis at NAMM was the 9' 2". To my ears, this piano had so much power it's unbelievable, and yet, it's capable of producing tones of every shading. A more responsive instrument might be hard to find. This 9' 2" Fazioli attracted great attention, as pianists took turns to try it. Please pardon the pun, but all the Faziolis there had one leg up on their competition—literally: they all sat on glass cylinders about 8" across and 10" high.(See above)The piano benches all sat on platforms which also rested on the same kind of glass cylinders. Thus, the pianists' relationship to the keyboard and pedals was normal, but everything was about 10" off the carpeted floor.

These glass cylinders were there for more than aesthetic reasons, I believe. They serve as "isolators" that keep the piano's energy from being dissipated into the floor (carpet, cement, etc.), and getting lost. Instead, they "reflect" the energy back into the instrument to do more useful work. (Schimmel has a similar idea, to be discussed below.) While the piano was being played, I went around feeling the lid, rim, fallboard, lyre, legs, and castors, all of which vibrated, but the glass cylinders didn't at all. The vibrations stopped between the castors and the glass cylinders.

I should also point out that, under each Fazioli grand at NAMM, there was a large piano-shaped mirror,

which permitted a view of the underside without having to bend over and look up. These mirrors also cut down the amount of sound that could otherwise be absorbed by the carpeting. Although I can't prove it, I have no doubt that the glass cylinders and mirrors contributed to the tremendous power of these pianos. However, I did hear one Canadian woman complained that it's "indecent" to put mirrors on the floor, but that's a concern totally unrelated to what Fazioli was trying to accomplish: show off its pianos at their very best.

It's been said that placing castor cups under the castors would improve a piano's tone. I'm not sure whether this is pure superstition, or whether there's validity to the statement, although I usually recommend them to my customers as a means to prevent the castors from sinking into the carpeting as they dig deep holes, and to keep the keyboard and pedals at the right height. The subject came up when I had the opportunity to discuss this with Albert Hattermann, the chief research engineer at Schimmel.

According to Hattermann, a tremendous amount of a piano's energy is lost to the flooring through the castors—as much as 50% in some cases. To correct this problem, Schimmel has developed special castor cups that cut such wasteful energy transmission down to zero. I've never seen these castor cups, except in pictures. From what I could understand from his description, these castor cups, each about 10" in diameter, are made of cast iron. The space inside the cast iron is filled with hard rubber tubes, which are to be inflated by pressurized air. The air trapped inside these castor cups works as an insulator. With a major source of energy loss eliminated, the piano automatically sounds much better.

Hattermann is also the inventor of the unique AudioForte sound system, which came on the market a few years ago. The AudioForte uses the piano soundboard to replace loudspeakers in a stereo system, and it's available only on Schimmel pianos. This is the exact opposite of using electronics to enhance the capability of the acoustic piano. The electronic drivers (shaped like large bells) are mounted inside a vertical piano or under the grand soundboard, and signals from the recording being played set these drivers in motion, which in turn set the soundboard in motion to reproduce the recorded music. The advantage of using spruce soundboards, instead of speaker cones, is that vibrations from the soundboard come from a much larger area, using both sides of the board, while speaker cones can only produce unidimensional sounds.

With the AudioForte installed, the piano becomes part of the stereo system, and loudspeakers are no longer necessary. The piano can be played at the same time that AudioForte is in operation. With a "Music Minus One" recording, the pianist could, for example, play a concerto on his piano with the orchestral part in its original instrumentation coming through on the same soundboard. Although AudioForte uses the piano's soundboard, not strings, it works best when the piano is in good tune. Hattermann said that AudioForte is the perfect combination of the German piano-building tradition and the very latest in high technology.

Photo 6

According to Hattermann, Schimmel is spending an enormous amount of money on research, because Klaus Schimmel, the company president, believes that's where the future lies. Companies that do not engage in extensive research are like farmers who're eating their seeds instead of planting them. It may feel good in the meantime, but when the seeds are eaten up, the companies are done for. What are some of the research projects Schimmel is pursuing? Mr. Hattermann said that's top company secret, and he couldn't talk about them, but when revolutionary products are ready for introduction, the world will know about them.

Besides the piano manufacturers, there were many suppliers at NAMM who manufacture products having to do with pianos. The first thing that came to mind was piano benches, and I visited Paul L. Jansen & Son, Inc., which had a medium-sized booth there. The Jansen company was founded by Paul's grandfather in 1885 in Chicago. It's now located in Oshkosh, Wisconsin, and Paul's son, Bill, also works in the business. That makes four generations of Jansens in the business, and Jansen is the oldest and largest of the three piano bench manufacturers in the United States. One of the other two is located in the same town.

Since Paul took over from his father in the 1960s, business has increased every year. Now, the 26-employee company is ready to move into a new 75,000-square-foot facility. Besides

piano benches of every imaginable type, Jansen also makes bench pads, piano covers, grand leg dollies, skid boards, castor cups, organ pedal guards, truck loading ramps, wood music stands, sheet music cabinets, etc. Although business is booming for him, Paul Jansen does have one complaint: "It's lonely at the top, and there's only one direction we can go—higher." I have no doubt that many businessmen would love to have his problem!

Slam Grand, Inc., of Reno, Nevada, is a manufacturer of grand piano cases only. That's right: it only makes grand cases in all sizes and finishes to contain electronic keyboards by other manufacturers. With a keyboard concealed in the Slam Grand, a rock band, for example, could still project the image of playing an acoustical grand. The case is just a shell, and for looks only. Weighing 185 lbs. for the typical 5' 2" model, the Grand Slam is easily transportable. It just proves that, whenever there's a need, someone will find a way to fill it.

NAMM SHOW

CONCLUSION

The most fascinating piano-related product at NAMM had to be the Pianoplan, an Italian-made piano-moving machine. (See photo 6.) Measuring 49" long, 19" wide, and 13" high, this 539-lb. machine can move a grand or vertical piano with the guidance of only one person, and he doesn't even have to sweat at all! But for better safety, two people are recommended, according to Andy Bull, president of C.H. Bull Co., the Pianoplan's U.S. distributor. When not in use, the Pianoplan could be stored in a vertical position to save space.

Built like a miniature tank, the Pianoplan runs on two heavy-duty rubber tracks. Among other things, it'll climb stairs, and shift its load automatically to re-balance the overall weight as it reaches the stair landing. Once there, it'll turn, re-balance the load again, and raise its front end to start the climb on the next set of stairs. The constant re-balancing is to make sure that the center of gravity is always at the center of the machine, regardless of which way it might be tilting. This is a very important safety factor, and the sensors make the machine do it automatically. Run on two automobile batteries, this machine has maximum stair-climbing load capacities of 660 lbs. and 1,320 lbs., respectively, for the two models available. For level-ground moving, their capacities are 1,320 lbs. and 2,200 lbs., respectively. All the operator has to do is to push the right buttons. When moving a piano up or down the stairs, either unit could replace several human piano movers who would normally be huffing and puffing, and possibly uttering vocabularies unfit for print.

The larger model could easily move a concert grand without trouble, and no skid board is needed. It could also be used to move heavy furniture, boxes, etc. With each demonstration, this incredible machine attracted a large crowd. The Pianoplan could easily put a number of professional piano movers out of business. The price? Well, the distributor would only say that it's a lot less than a typical Workman's Compensation injury claim (which is well over $20,000.00).

Seeing so many pianos at once, it's easy to lose sight of the fact that it's the pianist, not the piano, that makes music. If a person can play, he can make music on almost anything. If he can't play, the best piano in the world won't make him a pianist. In our society, a piano, especially a large grand piano, is commonly accepted as a sign of culture and sophistication, even to people who don't know where middle C is. Whether people are consciously aware of it, the purchase of a piano often involves a lot more than choosing a good instrument.

This is particularly true when it comes to buying a "high-end" piano. (Business people call this the "upscale market.") In addition to a good instrument, these customers are buying status, prestige, class, power, influence, and other non-musical qualities. These pianos are expensive, they *have* to be, and they *need* to be. It's especially desirable if other people also know these are extremely expensive pianos. If they were cheap enough so anybody could afford them, they'd immediately lose their value as status symbols and their snob appeal, too. When money is no object, the features could be as fancy as the manufacturers could dream up. Besides, there are a lot of claims and counterclaims about pianos that can neither be proven nor disproven. This murky area between technology and voodooism is often explored to the hilt for maximum profit, because the buyers are out there.

With a history of almost 300 years, the piano is a mature instrument. It has reached the point when even a small, genuine improvement requires a major effort in research and development. The many, many features I saw in the new pianos seem to represent what the manufacturers think "where the market is going," and each in its own way tries to stay a step or two ahead of the competition. Sales brochures often make claims such as: "We have repositioned our bass bridge in our new model PXQ piano. Now our soundboards are 4.938 square inches larger than those in the discontinued old model, and the average bass string is 0.279 inches longer. We've also added our patented tone-reinforcing bar, which makes our pianos sound better than ever...." Taken individually, such claims are relatively meaningless; but together, they could signal a genuine desire to improve their instruments—if one could only separate fact from hype. Misjudgments in this regard could be very costly, and sometimes the survival of a company could be at stake.

I must stop here and rush to the post office to mail this report and meet yet another publication deadline! Anyway, I hope the above has been worth your while, and I thank Jim Harvey for the honor of "subbing" for him.

TROUBLE-*SHOOTING* The Problem Grand Piano Action...

By Sam Powell, RPT

"...To focus our attention correctly, we must work through an ordered procedure..."

How many times have you been called in to look at a piano that "just isn't right"? It is one of "those" pianos that has gotten a reputation, whether justified or not, of being "no good." It has been looked at by several other tuners, and until now, no one has figured out why it doesn't play right but "everybody" complains about it and now it's your turn to try to figure it out. You could have two strikes against you from the beginning, because there could be some convinced that purchasing this piano in the first place was a big mistake, and no amount of time or money spent on it will change their mind. You're under pressure in this situation, and it helps tremendously to understand that the problem can lie in one of four separate areas that overlap and mimic one another: action geometry, regulation, friction and action mass, (key leads that don't match the mass of the hammers). We won't deal with the politics of the piano here.

To focus our attention correctly, we must work through an ordered procedure that establishes certain conditions sequentially rather than hopping around willy-nilly in the hope that some bright idea may occur in the meantime.

Eliminate non-action concerns

A piano that has a tonal problem not related to the action can act very much like the action is not working very well. If the strings, bridges, and soundboard (SBS) are not responding well, the pianist will have to work very hard to get tone out of the piano and will tire from playing. The action will feel heavy

because tone is not readily produced by it. The best way to check the performance of the soundboard/strings/bridges (SBS) area is to lift a damper and pluck a string with your fingernail. You will have to pluck a number of pianos that are working well in order to get a feel for what is good performance here, but in general the string should resonate freely and decay slowly with a light stroke of the finger. The tone should generate quickly after the sound of the fingernail releasing the string, thus enveloping the plucking sound quickly. Strings in the bottom three octaves will ring at least 30 seconds (or longer) on a good piano, and 5-10 seconds in octave eight with a gradual decrease in ring time going from bass to treble. You will learn to tell when SBS is working well and when something is causing the energy to be sapped too quickly from the strings. No amount of action work will compensate for this deficiency. Of course if the SBS is not working well then this must be remedied, but that is the subject of another discussion. Once you have determined that the strings are resonating well in all areas of the piano, then it is time to start talking to the customer.

Verbal checks

I like to start out by asking who has worked on this piano in the past. This doesn't guarantee anything, but if it has been repaired by one of the local "tooners" then I open my mind to the possibility of bigger problems. Has it had new hammers put on it? Was it regulated recently? What has been the complaint(too light or too heavy etc.)? It is wise not to jump to any conclusions here, and go in order. If you make up your mind too early what is wrong, then all other subsequent observations will be filtered by a mind trying to prove its earlier conclusion is correct.

First try to establish for yourself the nature of the problem with direct questions. We are dealing in an area where words often fail, so don't settle for the first answer you get. Keep probing, and search for answers that are as specific as they can be. Ask your questions as many different ways as you can, all the while affirming the helpful answers you get. What kind of music gives the problem? Which pianists have problems with it? Is the problem perceived to be more with touch or more with tone? (you cannot really separate the two). Does it seem to be climate sensitive?. Is there another piano in the area that is liked better by the musical community? If so is it the same brand or a different brand? Does the problem come and go or is it always the same? Has the piano always been "bad?" If there was a time when the piano was liked, what has changed in the meantime? Once you have a feel for the scope of the problem, move to the piano yourself.

Dynamic Checks

First gently play a chromatic scale feeling the action under a light touch; then go back, playing it with a heavy touch. Next, try to make a series of repeated notes play as fast as you can. What did you experience? Did you lose notes on the light touch? Did notes block under a light touch or a heavy touch? Did notes skip out under a heavy blow? Did it fail to repeat quickly? Was the drop too high or to low? Did hammers fail to show adequate repetition spring action when keys were released on a heavy blow? Was the after touch non-existent or too deep? Did the hammers fail to check properly during the firm playing? Does the action feel quite different when played with the sustain pedal depressed? If so, are dampers lifting too early?

Regulate samples

If you answer yes to any of these things, chances are the action needs to be regulated. Since we are here on a diagnostic trip, and other technicians before us have failed to solve the "problem," be very careful at this point about promising any marvelous improvements from regulating. Instead, take twenty minutes to regulate several sample notes in the bass, tenor and treble, and then re-evaluate.

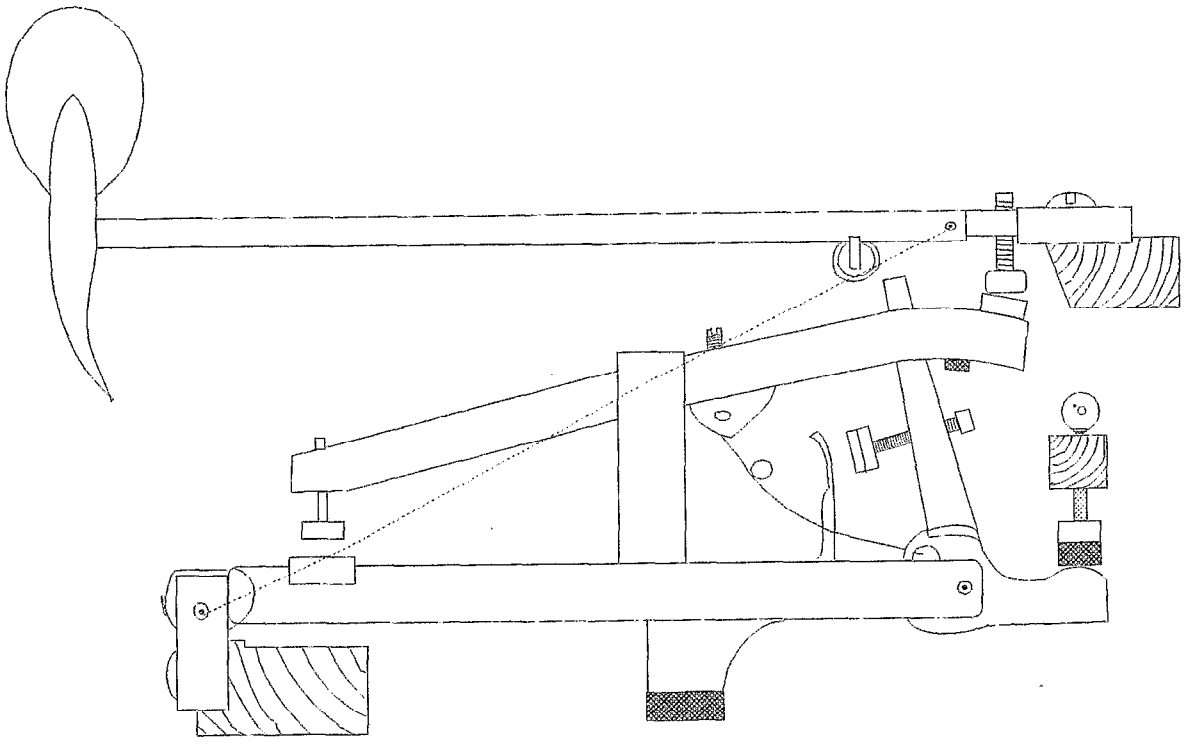
Evaluate the Geometry

While it is beyond the scope of this article to teach how to solve the problems of incorrect geometry, a few basic measurements of the action can tell us worlds about how things are put together, and at this point we must know if we are dealing with a normal action geometry. Make all of the following checks on the keys that are regulated.

1. The action spread is the distance between the repetition flange and the hammer shank flange. The Steinway measurement for this dimension is 4+13/32" or 4+7/16. If this is off by more than 1/16"(and this is a fairly large error) then things will not work as they should. Almost all modern pianos have copied this dimension exactly. If you do not know the specs for your piano, check to see if the jack buries in the rep window felt when the key is depressed. Assuming you regulated your samples correctly, the jack should bury (have no after touch) only if the spread is too wide. Conversely, if the jacks are clicking in the back of the rep lever window then the spread is probably too small. All of this talk about action spread assumes that the correct hammer shank is on the action, and that the center pin AND knuckle are in the correct place. If not, we are getting into deeper and deeper trouble here. Does it look like new shanks have been put on the piano?

2. With the hammer shank right at the point of escapement, the shank should be very nearly level. If the shank is down below level by more than 1/16" a great deal of extra friction is introduced into the action. This means that the hammers are bored too long, and reach the string too early in the rotation of the circles of the various parts in the action.

3. Is the repetition lever setting at rest with the jack end of the lever lower than the flange end. This is usually a sign of shanks that were installed with larger knuckles than the originals. This will also create more friction at both the capstan/rep cushion and the knuckle/rep lever contact points.



The dotted line demonstrates the relationship between the action centers and knuckle size. A larger knuckle size will place the contact point farther below the line, thus increasing friction at let-off.

4. Are the let-off buttons run to an extreme position in order to get correct let-off? This is another symptom of knuckles that are too large, or an incorrect action spread.

While these problems are seldom found on a new piano, they are often found on rebuilt ones, and if you are going to make this piano play properly, you had better be able to eliminate these trouble spots from your check off list before you go promising the moon to the customer. Remember, you are not the first hot shot who has been in here looking at this beast.

5. Pull a hammer up to the strike point and depress a key at the same time. Now stretch a thread from the rep flange center pin to the hammer shank flange center pin. In most pianos that play well the bottom of the knuckle molding is in line with the thread. (See illustration above).

If it is below this thread by very much, the action will not regulate to play well. This situation is caused by incorrect action spread, incorrect hammer bore, incorrect hammer flange pin height(common with new shanks), incorrect hammer shank dimensions or incorrect rep lever rail placement.

6. With the key depressed halfway, the capstan/whip cushion contact point should fall in line with a thread stretched between the bottom of the key at the center guide pin and the repetition lever flange center pin. This will be to keep in mind if we consider moving the rail later.

7. With a regulated key depressed all the way, check the after-touch of the jack. If the after-touch of the key is correct (.045"-.050") there should still be some after touch in the jack. You should be able to depress the jack tender a small amount beyond the point that the regulating button pulls it to. If there is little or no after-touch in the jack, this could be a sign of either incorrect hammer shanks and flanges or incorrect action spread.

Mass and friction

If you have gotten through the first two steps with acceptable marks, then it is time to address the Siamese twins of mass and friction. We may not change these, but before we sit down and suggest something to the customer, we had better know the whole picture, and not just part of it.

Static friction checks

There are a number of standard checks for friction levels in action centers and key guide pins. While there is not universal agreement as to what the ideal is (an understatement here) certain friction levels in the action generally accompany certain kinds of complaints or playing characteristics. It will help us make correct judgements if we know what the friction areas are like.

Remove the key-hold-down-rail and lift a key. It should readily fall back down to rest. If it doesn't fall readily, try to

determine if the tightness is at the balance rail or the front rail. If the keys are tight, we will get very distorted gram weight measurements. Next remove a repetition lever and a hammer shank and check friction at the flange pin. It is my experience that the action will have the best all-round behavior with mild friction in these parts (as apposed to as free as possible) but they should not be too tight either. Three grams is a good friction level for the rep-lever flange. Hammer shank-flange centers as tight as 10 grams are going to give you trouble. Ones as tight as seven grams are advocated by some, but I think five grams is good. In point of fact, these things change as the weather changes and as they are played in a single sitting. A good dynamic check for a hammer shank is to swing the hammer and look for 5-7 swings. Pull a spring out and check the friction of the balancier. We find a gram reading of seven allows us to run the springs up stronger than the low reading that occurs on many new parts. Parts pinned too loosely force us to lower rep spring strength to get the hammer to check reliably under a medium blow. This limits its ultimate repetition speed.

Using key weights

Once the keys are determined to be correctly fit to the guide pins and we like the friction in the centers of at least a few samples, we can go on to see how the action "weighs off." To do this, we set a selected combination of weights about where the finger is placed to depress the key and gently tap on the edge of the key bed with the heel of our hand while depressing the sustain pedal. If the key plunges to the keybed, the weight is too heavy. We must re-configure the weights until we have a selection that will depress the key to the point of let-off but not through let-off with one or two taps of the hand (New York Steinway technicians are allowed two taps while Hamburg technicians are only allowed one tap). Adding up the amounts of the individual weights yields a figure that is called the "down-weight" of that key. Now with the key depressed (and the pedal depressed) place another, lighter selection of weights on the same spot on the key and see if the key will lift the weight. The heaviest amount the key will lift clear to the top is called the "up-weight". If a key has trouble lifting weight of any amount all the way to the top this can be a sign of either intermittent friction (knuckles or back checks rubbing) incorrect key leads for the hammers or incorrect geometry. The difference between the down-weight and the up-weight is accounted for by the friction in the system (for the most part).

Interpreting the key weight results

Of course pianos vary tremendously in the area of key weight, but I will first give you Steinway's factory specs for their pianos and then give you some general guide lines about why keys are weighted in the first place to better interpret for yourself what you are seeing on your problem piano. A Steinway 'M' is supposed to be set up with key number one having 50 grams down weight, and number 88 having 46 grams down-weight. Middle C is 48 grams and the others flow evenly in between. Of course these things vary with use, hammer filing and weather changes. Measurements different from these do not mean they were not done correctly at the factory. Keys especially will tighten at the center rail pin as the action parts shrink with seasoning.

Some pianos will be lighter than this but most will be heavier (some pianists seem to think this is good). A comparison of the up-weight and down-weight will tell us if the heaviness is friction or mass. As stated earlier the difference between the up weight and down weight is the friction in the system. Friction of more than 30 grams is considered excessive.

Early pianos had no weights in the keys. These instruments had very light action parts and did not require leads in front of the balance rail to balance the weight of the shanks, hammers and repetition levers. As these parts grew in size on the 19th century instruments built out of the "English" school, it became necessary to add weights in the keys to keep the effort to play the piano within the limits of the human anatomy. Pianos built around 1900 had fewer key leads than the majority of pianos built today. The felt in older pianos was lighter, being pressed under less pressure, and around lighter molding woods. It is not my place to judge this, just be aware that heavier hammers require more weight in the key.

Too much friction

If the key has a down-weight of 55 grams, and an upweight of 15 grams, this action will seem very sluggish. The sluggishness will be due in this case to too much friction. The solution? Clean, lube, polish, fit, and if necessary, repin and/or replace parts.

Keys heavier than hammers

If the action has low down weight and low up weight (45 down and 15 up) then there is too much lead in the keys for the weight of the hammers. This action could be made to play acceptably with lubrication, but it is difficult to get friction levels to stay below 30 grams after the effects of lubricating wears off.

Hammers heavier than keys

If the key has high down-weight and high up-weight then the hammers are too heavy for the leads in the keys. This is a very common situation with rebuilt pianos that have had modern, heavy hammers (post 1935) put on an older action that was weighed off with lighter hammers. What do we do now? You can either add leads, or take weight off the hammers. Either one is a big job, but in general, an action will play faster with lighter mass in the action. In addition, heavier hammers increases the FRICTION at all friction points. Heavier keys do not change direction as easily as lighter ones. All things being equal, I prefer to lighten hammers and not increase key weight.

Sorting it all out

Even if you are sure you know what is wrong, you still have a challenge. You will be dealing with a customer who may be expecting either miracles or failure from you. Either attitude can present prob-

lems. You need to be sure you understand each other, as this may be the biggest hurdle to overcome. The customer's attitude is one area you have little control over.

If the action was out of regulation, and the mass, geometry and friction appear to be within acceptable limits, then I think it is safe to assume that the action will perform well if properly adjusted. If, however, the measurements you took on your regulated samples showed problems, then you will have to make judgements about the outcome and cost of making more fundamental changes in the action.

Changing the geometry

Changing geometry is not to be undertaken lightly. It is to be considered only after careful measurements and diagnosis, but if you have determined that only this will fix this piano, then include this in your work, and charge accordingly for it. If you are not capable of doing the work yourself, take the wiser course and call a more experienced technician in on the job with you. Keep in mind that changes here change regulations considerably and will require more time to re-set than an ordinary regulating procedure. In every case, it is advisable to change just a few samples and then regulate them to determine for certain that your diagnosis is on target.

Incorrect hammer bore

It is cost-effective to remove improperly bored hammers, plug the holes, redrill them and reglue them at the proper bore. A complete regulation will follow. I would only do this on hammers of high quality felt with a useful amount of felt left. We perform this task, not including the regulation, in our shop in about eight hours.

Incorrect hammer shank center pin height

On pianos with separate rails (non-Steinways) it is possible to shim the hammer shank rail to get the center pin height at its correct position. Keep in mind that this may require plugging and re-boring the hammers. A full regulation always follows.

Incorrect action spread

If the action spread is "off the wall," it is possible to change this by moving the repetition rail on most non-Steinways. Keep in mind that when you change this rail, you are changing many things at once, so make every conceivable check after you have moved the rail. This is perhaps the hardest problem to solve correctly. Without figures you can trust for certain, you will be hard pressed to know for sure if you are helping or hurting until you try a few samples. Of course you want to make accurate registration marks of the original location of the rails so you can return everything to its former place if things do not improve. Check the capstan/whip cushion alignment and the knuckle/jack contact point with a thread. Check jack after touch, and position of jack in the window at rest. Is it too far back now? Check the hammer travel with a dip of at least 3/8". If you can get a travel of between 1 3/4" and 1 7/8" then you are probably in the ball park. Check your up and down weight figures again as well. If you are indeed correcting problems and not creating them you will usually see a reduction in the difference between up and down weights after things are moved. Reducing action spread usually increases both up and down weight, but should increase up weight more.

Incorrect friction

As stated before, too much or too little friction at the action centers will cause problems. Too little friction at the action centers will make it hard to run the rep springs high enough to repeat fast and still check reliably. Too much friction in the action centers will require too much down-weight to get adequate up-weight resulting in a very sluggish feel.

Poor match of key weights and hammer mass

This is perhaps the most common problem encountered in rebuilt pianos. As stated earlier, old actions often had at least two fewer leads per key than newer ones, and new, heavier hammers must either be lightened, or the keys weighted. It takes almost an entire day to change the mass of an action, which involves removing the hammers from the shank rail, sanding them thinner and with a greater taper on the tail, and/or reweighing the keys to match.

Hammers and tonal response

I did not talk about how the hammer felt itself effects the perceived performance of the piano, and yet it is a vital consideration. I promise a discussion of this issue soon.

Summing Up

Listen to the customer, and the piano. Then check action regulation. Next check action geometry on regulated samples. Then check action mass and friction with your gram weights. After all is evaluated, and you have compared the original complaints of the customers with the piano's condition, you will likely have some very good theories as to what work will make this piano satisfy the customer. I know there are a few prima-donna technicians who feel the pianist doesn't know as much as they do, and should thus be left out of the technical discussions, but I have found, over the years, it generally helps if the pianist knows what is going on. After discussing all of this thoroughly with the pianists involved, then we can begin work.

Change geometry first, if that is required, and regulate samples. Then re-evaluate the friction. Once this is OK, check out action mass with the key weights. After geometry, friction, and mass are correct, then, and only then will regulating the action produce the best results. If you follow these guide lines, you will seldom run into a piano that you cannot fix to most people's satisfaction, and you will gain total control over what is happening in the actions of your customer's pianos. If the problem is purely political in nature (someone else picked out the auditorium's piano without consulting the complaining pianist), make sure that you have dealt with this before you go ahead. Otherwise be sure that you and the other people involved can take the heat later on.

If you have a piano rebuilding shop, and you are doing a good job, you are probably going through these steps every time you rebuild a piano because of the slight changes that have taken place in the specs on action parts over the years.. The step that is left out in the shop situation is the complaining customer. In this case, you are the critic, and the one who must be satisfied with what results from your work.

DEFINING

PIANO•TECHNOLOGY•TERMS

By Kent Swafford, RPT
Contributing Editor
Kansas City Chapter

Many of the words that we use have various and conflicting meanings. In order to communicate meaningfully, we must be careful that the intended meaning of a word we use is the meaning that the person we are trying to communicate with actually hears and perceives. This is a discussion of a few of the words we use as piano technicians.

Compromise

The rock musician says he'll never compromise his high musical ideals; a compromise bill gets sent to the President for his signature; the person's reputation was compromised when the door was opened at an inopportune time; the piano tuning was compromised by noise in the hall; and, equal temperament is the supreme compromise of which piano tuners are masters.

Is compromise in piano tunings good or bad? Compromise is inherent in tuning equal temperament, so I thought compromise was good, until I heard a piano tuner complain that one of this tunings had "compromises" because of all the commotion going on in the room where he had been tuning. In the example of tuning a piano under adverse conditions, to say that a tuning has compromises is a simple obfuscation; that is, a way of avoiding having to say that the tuning had to be left incomplete.

Just what do we mean when we say that piano tuners are masters of compromise? The sort of compromise inherent in tuning the equal temperament of the piano is not a bad thing; it is wonderful.

When I was first learning how to tune pianos, I learned a very valuable lesson about the power of the "piano tuner's compromise" from, of all things, trying to tune an Arp 2600 synthesizer. (My Arp, a musical instrument now over 18 years old, is considered a "dinosaur" from the pre-history of electronic music; while pianos are sometimes considered still youthful at the same age, an Arp nowadays is considered useful to many only as a doorstop.) While electronic musical instruments have a reputation for mathematically perfect tuning, this turns out not always to be the case. My Arp has random errors in temperament due to inconsistencies in the ability of the oscillators to evenly "track" the keyboard control voltage. Adjusting the tracking response of the oscillators to produce any one perfectly beatless octave inevitably introduces obvious errors in other octaves. I was unable to deal with the situation until I applied a technique from piano tuning, the above-mentioned piano tuner's compromise. I gave up the idea of making any of the octaves perfectly beatless and looked for an adjustment that would bring the least beating to the octaves across the entire scale, splitting the differences between very slightly wide octaves here and very slightly narrow octaves there. It worked. In the actual playing of music on the instrument, the errors that had been so obvious when I was trying for perfection simply disappeared. I achieved musical perfection by abandoning perfection in any one

On Compromise...

"...Of course, there is a perversity of human nature that makes it difficult to hear the beauty of a finely worked compromise that one wasn't himself involved with. If another piano tuner comes in and listens to that E3 on which you have wrought such a great compromise, playing only the E3-E4 ocatve, he might very well hear a slight imperfection in the octave and pronounce the tuning ***awful...*** *"*

interval. If the preceding sentence sounds like so much metaphysical double-speak, you have surely missed the point, because this is a powerful, practical technique in piano tuning.

As an example, in tuning E3 on a piano, one can tune the E3-G#3 major third to form smoothly progressing parallel thirds, that is, G3-B3, F#3-A#3, F3-A3, E3-C#3, or, one can just tune E3 to form the best sounding octave with E4. Sometimes two ways of tuning a given note on the piano will conflict, even on the best of pianos. All pianos have scaling inconsistencies; some just have more or less than others. However, one can usually find a way of tuning E3 that will produce a good clean octave and at the same time produce reasonably smooth parallel major 3rds (and perfect fourths, perfect fifths, major sixths, major tenths...). Even if the octave isn't tuned exactly how you would tune it in the absence of other intervals, and the E3-G#3 3rd isn't exactly what it would be if you were only trying to tune the smoothest possible progression of parallel major 3rds. In the actual playing of the piano, the compromises may disappear, leaving a perfect-sounding tuning.

Of course, there is a perversity of human nature that makes it difficult to hear the beauty of a finely worked compromise that one wasn't himself involved with. (This is something that the politicians among us should keep in mind, but that is another story.) If another piano tuner comes in and listens to that E3 on which you have wrought such a great compromise, playing only the E3-E4 octave, he might very well hear a slight imperfection in the octave and pronounce the tuning "awful." Of course, it isn't awful; the octave just may not comply with his preconceived notion-of-the-moment of what a perfectly tuned octave should sound like, and since he hasn't yet listened to the other tuning intervals, he can't appreciate the quality of the work. I have always wondered if this might be part of the explanation for the stories told about how "awful" a particular master tuning for a PTG tuning exam piano sounded. If you weren't there helping to make the tough choices, it would be good to be very careful about criticizing the results.

The best, most dramatic demonstration that I have heard of spreading the beat rate inconsistencies between all of the tuning intervals was provided by Steve Fairchild some years back. He used a pair of Sanderson Accu-Tuners, careful measurements of the string dimensions of every note of a very fine piano, mathematical formulae, and a spread sheet program running on a personal computer to find the tuning that would provide the overall smoothest beat rates, not of any one given interval, but of all the tuning intervals, compromising individual intervals as necessary. Then, using multiple pages of memory in his Sanderson Accu-Tuners, he saved the tuning partial by partial, that is, all of the second partials on one page of memory, the third partials on a page of the other Accu-Tuner, and so on. Finally, playing both Accu-Tuner oscillators through amplifier/speakers at the same time, he stepped through the various pages of memory and was able to demonstrate one at a time and with absolute clarity, the beat rates of the various intervals of his tuning. The tuning was beautiful, and, at the same time, the inconsistencies in beat rates that were so necessary, could be heard by everyone.

Equal Temperament

The piano tuner's compromise is unique in the world of music, as is the equal temperament of the piano. Equal temperament is sometimes defined as dividing the octave into twelve equal half-steps, but for piano tuning, this definition does not adequately describe the complexity of the feat we perform each day. The reason for this is the elastic nature of the octave on the piano. Any two strings on the piano that form an octave are likely to have measurably different levels of inharmonicity. Since octaves have multiple sets of coincident partials (2:1, 4:2, 6:3...), it is impossible to tune absolutely beatless

On Equal Temperament...

"...Equal temperament is sometimes defined as dividing the octave into twelve eaual half-steps, but for piano tuning, this definition does not adequately describe the complexity of the feat we perform each day

octaves, because due to the effects of inharmonicity only one set of coincident partials at a time can be tuned perfectly beatless, leaving beating in all the rest. I was taught, and still believe, that there is actually a small but measurable range of widths in many piano octaves that will produce a beatless effect. The width of octaves can be adjusted slightly as required to accommodate the other intervals that every note forms in addition to the octaves.

Equal temperament of the piano is that tuning which produces smoothly progressing beat rates up and down the scale among all of the tuning intervals, including the octaves. Just as one should expect to hear a smooth progression of beat rates when playing chromatic major thirds (that is, in half-steps) up and down the scale, one should expect the same sort of smoothness in octaves played up and down the scale. Indeed, piano tuners have extended the concept of the tempered interval to the octave itself. The slight beating that is present in a given octave needs to be as similar as possible to the beating of the octaves a half step above and below. Now this is the equal temperament of the piano. And it cannot be accomplished without compromise.

It is not common practice to refer to octaves as tempered intervals, but on real pianos in the real world, the lower sets of coincident partials of octaves are commonly tempered as much as or more than that of fifths. (In preparing this article, I thought I should measure some intervals to be able to give some real world examples. The first intervals I measured on a freshly-tuned piano were a 2:1 octave and a 3:2 fifth whose coincident partials were all on the same note. The 2:1 octave—usually thought of as pure—actually measured 2.2 cents wide, and the 3:2 fifth—usually thought to be contracted by two cents—measured exactly pure. Similar measurements on other pianos would vary, but these were not out of line.)

Stretch

Just like "compromise," the word "stretch" has a number of meanings: he was stranded on a deserted stretch of highway until a stretch limousine pulled up. She couldn't wait for the seventh inning stretch. We stretch the imagination, and stretch the dollar, and piano tuners "stretch octaves in the bass and treble to make things come out right." I believe that there are two quite different definitions of stretch in common use by piano tuners, both correct, but in conflict with each other.

On Stretch

"...I believe that there are two quite different definitions of stretch in common use by piano tuners, both correct, but in conflict with each other."

In the mathematical model of equal temperament, second partials are exactly twice the frequency of first partials; and where two notes are tuned to form a beatless octave by tuning the first partial of the upper note to the second partial of the lower note, the frequency of the upper note of the octave, just like that of the second partial of the lower note, is at exactly twice the fundamental frequency of the lower note. On real pianos, the frequency of the second partial is greater than twice the frequency of the first partial, so when the first partial of a string is matched with the second partial of a lower note, an octave is formed in which the frequency of the upper note is also greater than twice that of the lower note. An octave in which the frequency of the first partial of the upper note is greater than twice that of the first partial of the lower note, is sometimes described as "stretched," because the octave is clearly wider than that of an octave in the mathematical model of equal temperament. This use of the word "stretch" results in statements like: "On the piano, if octaves are beatless, they are stretched." Since the fundamental frequencies are farther apart than in the mathematical model, they are stretched, at least, as compares with the model.

There is, however; another definition of stretch that is more useful (if not necessarily more correct). As mentioned above, octaves can be tuned in such a way that they can produce a beatless effect, but in reality only one set of coincident partials at a time can be perfectly beatless in an octave. (Sometimes, none

are perfectly beatless.) Generally, lower coincident partials (2:1) tuned beatless produce narrower octaves than when higher partials (8:4, 10:5) are tuned perfectly beatless. Optimum octaves that produce a beatless effect will tend to be wide at the lower coincident partials while still narrow at the higher coincident partials. In running octaves, to stretch, then, is to deliberately introduce beats in the lower sets of coincident partials to produce a desirable overall effect, such as to correct for the effects of inharmonicity and to fit each note of the octave into the unique equal temperament of the particular piano being tuned.

Theory

I can't resist pointing out that there are at least two different ways in which piano technicians use the word "theory." Its meanings are many. The theory is that he got away from the scene of the crime in a stolen car. In the preceding sentence, theory is actually just speculation of a hypothesis. There is the theory of evolution in which a theory is a plausible scientific body of principles offered to explain a phenomenon. When used by musicians in the phrase music theory, theory is an academic body of knowledge used in the art of music. So what is the theory of piano tuning? The mathematical theory of equal temperament has only a limited application to piano tuning, so to some piano tuners, piano tuning theory is an abstract ideal that exists not in the real world, but only "in theory." But there is a quite different definition of theory that applies better to piano tuning, and that is theory as a "procedure followed as a basis of action." In other words, piano tuning theory is the set of underlying principles and procedures that when followed, allow any piano to be tuned to a uniform standard. This is the modern "theory" that had its beginnings (at least in written form) with William Braid White and developed through this century continuing to the present. So if piano tuning theory is only hypothetical to you rather than being something you actually use when you tune a piano, then you may need a new theory (and some new ideas about what constitutes "theory").

Cents

Here is one last example of how vital definitions can be. How many cents are there in a half-step? One cent is usually defined as being one one-hundredths of a half-step, so there must be 100 cents in a half-step, right? The half-step that is divided into 100 equal parts to define a cent is the half-step of the mathematical model of equal-temperament. Half-steps on real pianos are somewhat wider than the half-steps of the mathematical mode, but the cents that we use to measure those "wide" half-steps are those of the mathematical model. So, how many (mathematical) cents are there in a half-step on a real piano? It varies through the scale, but the answer is likely to be somewhat more than 100!

On Theory

"...When used by musicians in the phrase music theory, theory is an academic body of knowledge used in the art of music..."

BEHOLD

THE UPRIGHT

By Don Valley, RPT
Western Carolinas Chapter

This is the first in what I hope to be a comprehensive collection of articles dealing with repair, rebuilding, and regulation of the upright piano - that item giving the technician identifiable reactionary feelings in opposing directions. I know of no other instrument type that quickly brings on such emotional outbursts, unless it might be the square grand.

For some time now there has been a void in the subject matter pertaining to the technical needs of the upright. With changing trends in piano interest and the need for the piano as part of the home's environment and appointment, the tuner-technician must stay abreast of the knowledge required if that service person is to act in the best interest of the client.

The upright is perceived with variying attitudes regarding the need for it, the want for it, the worthiness of it, and the beauty of it. It seems there has been an upsurge in interest for maintaining, upgrading, and/or acquiring an upright all ready to go. Let us think of it this way: when you encounter a client who needs a piano, will not afford the cost of a new piano, has inadequate space for a grand, and yet is determined to get as good a piano as the checkbook will allow — whether or not the piano is for adult or child beginner use — the PTG technician has a responsibility to provide a piano adequate for the purpose, either through improvement of an existing one or supplying one ready to go. In spite of your personal preferences, you have an obligation to make that upright satisfactory as well as giving advice and counseling.

Now that the justification of the upright is out of the way, the purpose of these writings is to help you perform the usual and not-so-usual repairs in your shop with applications in the field as well. After all, as Clayton Harmon loudly proclaims, "Piano Tuners Still Make House Calls." Granted, there is a narrow latitude as to procedures sensibly performed away from the shop, but with particular care, much more can be well done in the home than we usually assume.

Prior to considering the technical display of the "how tos" and reasonable "whys and wherefores," let us explore some prevailing attitudes among technicians and retail establishments.

Not a wise investment?

Really, now! Who is ultimately qualified to say what is wise or otherwise in an investment? Yes, it is the technician's responsibility to inform and advise, keeping foremost the best interest of the client. However, the client is perhaps not looking at this upright as an investment but is looking for a good tool to build the investment — that being the student's development in learning to play piano irregardless of the age of the player. In this regard, it is the means to the maturity of a great investment. Usually the purchase of an upright or the upgrading of one already owned is the first step to the purchase of a new piano.

One is duty bound to tell the owner the real truth of that precious family heirloom you have been sought out to restore. In many instances, major rebuilding is necessary to fulfill the desires of the client. The client is agreeable to spend several hundred, to even several thousand, dollars for restoring that "family member" again. When worth in its finished condition will be no more than a fraction of the cost of the work performed still does not discourage the client, then value must be elsewhere than in a momentarily increasing investment. You have been chosen as the best person — the professional — to perform the procedure. Will you perform in the best interest of the client or will you refuse the job because of some preconceived attitude? If that didn't sound good, let me clarify. Sometimes it is in the best inter-

est of the client to turn the contract over to another technician for such reasons that you may be backed up too far with other contracts for the client's time limitations. Or you simply do not have interest or expertise in performing the terms of the contract. As a good technician, just as in other fields, you should arrange or recommend specialists in areas where your expertise is lacking. This is to the credit of your reputation, never detrimental to it.

Does it substitute for new piano sale?

Perhaps so. As of right now, the long-term is the factor to consider. If the student does well, that client in two to five years will upgrade to a new and much finer quality instrument than would have been purchased as a new piano to begin with. The tendency for getting a new piano right up front is to buy the very cheapest one available. Then, when that student progresses with keener skills, the judgment is for the parents to retain that new piano because "it is not that old" rather than upgrade to a much finer piano. Now at a time the student is full of vitality and eagerness, the quality curve runs counter to the encouragement curve of the learner, right when encouragement is most critical for continuing advancement.

I prefer to do grands

That is your choice. I love to do grands, too. Yet, there has always been those times when the upright repairs and restorations have added extra income in a substantial way. Besides this, you have distinguished yourself with a reputation such that those who trust you will insist on you to do their piano. They will settle for absolutely no one else.

Technical work on the upright is not "training ground" on the way to more advanced, technically rewarding and fulfilling work on grands. The performance of various tasks must be just as exacting for this type of instrument as for any other in order to achieve accurate musical response, this being the purpose of the whole venture from the outset. Could it be there is an attitude that a good end product is not possible? Just doing a passable job will have to be good enough? Of course, this will end up with less than adequate results and, therefore, the feeling that "this is all that could be done" culminates in a less-than-desirable product. Whereas, had best performance in each facet of the work been the guiding force, the finished piano would have displayed completeness and genuine perfection throughout the critical aspects of every element of the instrument.

No money to be made in uprights?

This attitude is descriptive of a choice, not a potential.

Yes, you will find a greater number of owners who want just a tuning and a quick fix-up — "cheap as you can; the kid's only beginning." There is lots of room for an education here as you can see. Be sure to pull in your available marketing helps to substantiate your recommendations.

Perceiving the upright as a "low-priced piano" does not mean the improvements you make should be any less cost-productive than the exquisite performance brands. If it is worthy of your effort and expertise, it should provide a standard profit. Many of your clients, because you have earned their trust, will choose to have hundreds of dollars worth of improvements done as you recommend.

"You cannot make a silk purse out of a sow's ear" is a familiar overdone proverb. Too many times because of a less-than-honest appraisal or an attitude of rejection by a technician, upright pianos are determined to be "sow's ears" when with an honest evaluation, many can really be in the end that "silk purse."

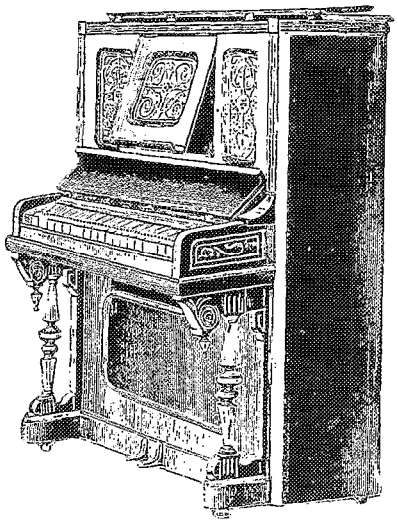
There are many upright "diamonds in the rough" just as there are in grands.

There are other attitudes, of course. In fact, one comes to mind of a company that disposes of every upright it gets. They go to the landfill. What a tragic result because of a closed mind.

All of the above has been said in substantiating the need for a series of technical articles featuring the upright. The upright has been good to me. At times when some colleagues are crying the blues from a lag in their chosen specialized area, others are swimming right along because of accessory and related contracts, making a living and loving it.

Let us make sure we are not satisfied with "just good enough to get by" results. Charge a good dollar. Use quality materials. Perform with skill. Achieve excellent results. Do it once — do it right!

Next month we will do an appraisal of worth, going into the specifics of each area to evaluate and determine the extent of repair necessary. We will be "getting the client ready" to say the magic words.



"Should I get a cellular phone?"

is a question I have been asked many times over the past few years. While I cannot answer the question for everybody, I think my two-plus years of personal experience using cellular phones, plus the opinions and experiences of many cellular-user friends, relatives and business associates (including many piano technicians), might help you answer the question for yourself. I will give you the summary up front, though: I believe that most independent piano technicians could benefit (i.e. service their clients better and increase their income) from having and using a cellular phone. Most, I believe, would increase their earnings many times more each month than the cost of having a cellular service. If you want to know why I feel this way — read on.

By Randy Potter, RPT
Chair, Economic Affairs Committee

How technicians use cellular phones

I had not had my cellular phone long when I learned it was a useful tool. Two weeks after I got it I was tuning in a small town 45 miles away, and someone called from a neighboring town wanting a tune. The $60 I earned on the way home more than paid my monthly service charge, which was then $50. Without the cell phone Lynne would not have been able to contact me. While I would have been able to tune the piano later, doing it on the way home it was "extra" income. I was able to service my client quicker, and I saved an out of town trip for just one tuning. For the first six months I had my phone I kept track of how much time and money it saved or made me, and each month I earned more money than it cost. Plus it added a new freedom to my life. Satisfied, I quit keeping records. As I have gotten used to it, the benefits and savings continue to increase.

Jim Coleman, Jr., of the Phoenix, Arizona, Chapter (and Western Regional Vice President), had been looking at cellular phones for some time, but decided to take the plunge after he was out on a tuning call one day and could not find the house after 30 minutes searching. Even the map did not help. He ended up driving several miles before finding a pay phone he could use, but by then he had lost too much time and had to go on to his next tuning. Pat (his wife) called and rescheduled it for another day, but he realized calling from his car would have saved him an hour, and the $60 tuning he lost that day. He later learned that at the time he quit searching and went for the phone he had been overlooking the woman's house, but was separated by a berm.

"I am sure I save anywhere from two to four or five jobs in a month, because I am able to shuffle clients around, or get back to the shop to do some extra work. Sometimes they don't answer the door and I call, and find they were in the bathroom, or on the patio and just did not hear the doorbell."

Dave Peake of the Portland, Oregon, Chapter says "I find it helpful if I am in a traffic jam, and think I might be late. I call my client and tell them the situation. I also give the number to clients if they think they might have to leave before I get there, so they can contact me if they need to. I don't give the number out to everybody. And I don't want salesmen calling me."

Joe Gotta of the Charlotte, North Caroline, Chapter does what many of us have considered, and wondered if it would pay off — he forwards his phone to his cell phone when he goes out on tuning calls, or is away from home for any reason. He takes calls and makes appointments while on tuning appointments.

"I have my basic phone number that is advertised everywhere, then I have ring-master number, which costs about $6 a month. When I am not home, I have my primary number transferred to my mobile phone. I also have "no-answer transfer" on my cellular phone, so that if I do not answer the phone, maybe because I am out of the area, after four rings it will automatically send it back to my Ringmaster number, and my answering machine will take it."

Joe has had his cell phone, a hand-held that fits in his shirt pocket, since September 1992. He says he uses his cell phone an average of about 200 minutes a month, and his phone bill is about $80. When I asked if he felt it was worth it he replied "Oh yes. I go home to find there are no messages on my answering machine. Before I would have several messages to return, and maybe five hang-ups. I would spend a lot of time calling them back, only to find they had already called someone else. It's gotten me a lot of business and saved me a lot of time as well."

It saved me a lot of time, too, because I called Joe on a Saturday. It was morning, Pacific Time, and about noon where Joe was. He answered my call from his car on his cellular phone — I got to finish this article and Joe did not have to call me back when he got home. And it allowed him to make good use of at least 12 minutes of his driving time. Thanks, Joe.

Doug Wood of the Seattle, Washington, Chapter (and member of the Economic Affairs Committee), who has had his phone for a year and a half, says he doesn't use the cellular phone to take incoming calls from clients. "I am very careful about handing the number out, because I don't want to take calls when I am tuning," he said. He uses it mostly to call clients who did not answer the door, "its always fun to

call the customer from the front steps and have them say 'I didn't hear the doorbell ring,'" and to make other business calls that must be done during the day but are difficult to do because he is not home. He also gives the number to friends and other technicians who need to get a hold of him for a particular purpose, or when he is planning to meet someone somewhere.

Doug's summary statement, "I wouldn't go without it," seems to be the opinion of every technician I have talked to while researching this article.

Other uses

I purchased my phone in December 1991. Three weeks earlier, while on a Thanksgiving vacation with my family, I spent 45 minutes, first trying three pay phones and finally stopping a state police car, trying to help a stranded motorist get a tow truck. The remote area along Highway 26 going over Mt. hood had just gotten cellular service, and I could have provided the same assistance in 45 *seconds* using a cellular phone and calling 911. Two weeks earlier my mother had open heart surgery, and while one of my brothers had the ability to maintain contact and get regular updates while working via his cellular phone, I was out of communication from both the hospital and the rest of the family whenever I was out of the house. Since then I have also seen and reported four traffic accidents, two requiring ambulances, and at least two forest fires.

Jim Coleman also related several accounts of using his phone for emergencies. He, too, has reported several traffic accidents and at least two house fires. (I live near forests, he lives near houses.) Once, while driving to a small town out in the boonies he services, he came upon an automobile accident 20 miles from the nearest phone. While the people had been pulled from the cars, no one had summoned the state police or an ambulance, because no one had a phone. Jim called on his cell phone, and both arrived in a few minutes.

So, while you may get a cell phone for business purposes, you will find that personal convenience may be one reason you keep it.

The costs

What does it cost to get cellular service? Like most other services there are both equipment costs and monthly fees.

Equipment costs

Equipment costs — a cellular phone — can cost you between about $30 and about $900 (for most reasonable people, though you *can* spend up to about $1,400, and perhaps more), but with the various "rebates" available you are not likely to have to pay that much.

The $30-100 phone deals are lower-end mass-market very cheap phones usually offered through chain stores, and are usually available at that price only if you sign up for a year's service through their cellular carrier. Though inexpensive, I have yet to see any that do not perform the necessary functions correctly. The phones actually cost much more than the price you pay, but because the cellular company pays the dealer from $250-300 for signing you up as a user, they can sell the phone at a loss. It is a good way to get into the cellular market, and see if the service suits your needs, wants and desires.

Though most people get hand-held phones, which put out .6 watts, you can get more power. Phones installed in cars, with the antennae on the roof away from you, are 3 watts. So are the transportables, or "bag phones." With five times the power, and using the car's roof as a dish, a car phone has less static, and better reception and transmission in fringe areas, but it doesn't fit in your tuning kit and you can't use it unless you are in the car. About the size of a medium-size purse, bag phones can be carried into your client's homes when you go in to tune, but they are bulky and dorky (my opinion), and are more difficult to use in the car. If you set it on the dash to get better reception it usually falls off. At least mine did. And the handset cord was too short to set it over on the other bucket seat without it pulling off onto the floor. I took my bag phone back after two weeks and traded it for a Motorola Ultra Classic BCY, which I could hold in my hand to use and clip onto my belt to carry.

Even that technology has been miniaturized, and most people I know are buying the fits-in-your-shirt-or-blouse-pocket phones today. Joe Gotta's does, Dave Peake recently went from the hang-on-your-belt-type to a Motorola 550 Flip Phone. My new digital phone does, too.

I recently decided to upgrade my phone from a "standard" analog phone to a digital phone. The new phone, an Ericsson DP-180, "cost" $899 — at least on paper. But they gave me $200 trade-in on my two-year-old Motorola. (It cost me $15 a month to own the phone for two years.) The trade-in brought the price down to $699. Cellular One is currently giving a $300 air-time credit ($50 a month for 6 months) in our area to new or existing subscribers who go digital, and that brought the price down to $399. Then they sent me a $250 rebate for buying the phone, which makes it $149. I was going to buy a new battery, to replace one of the two that came with my other phone and was no longer holding a good charge. If I take that $70 savings off, the effective cost for the new phone was really only $80. Digital phones are supposedly very expensive, and some recommend waiting until the price comes down. But with the discounts and rebates currently being offered, they are very little higher, and may even be less expensive, as in my case, than analog phones. As the price drops the incentives will go away and the "real" price will be about the same.

Prices vary from place to place, of course, from company to company and from time to time because of special promotions. In researching this article I spoke with a representative of Cellular One today, who said the $300 air time credit currently available in Oregon is not available in Washington. And by the time this article is printed it is likely that many things will have changed.

Should you get digital service?

Many cellular companies are currently installing new digital equipment, allowing more calls to be routed in the same space. Those of you who are technophiles may be interested in some

brief details. With Time Delay Multiple Access (TDMA) equipment, on a digital phone, the sounds are divided up into binary bits (1s and 0s) and sent in bursts, allowing them to transmit three different calls in the same space one analog call currently takes. So the cellular company gives you a lower monthly rate for using a digital phone. According to a Cellular One spokesperson I talked to, they already have the technology to route six digital calls in the space of one analog, and believe that in the near future they will be able to route as many as 20.

And sound quality is better with digital. At its best, near a cell site, both analog and digital have similar sound quality, except that the digital phone will be more clear because it is a better technology — especially where the cellular company is transmitting in digital. Near the fringes of a cell site, though, the quality of digital can also deteriorate like analog, though not as bad, and the difference in sound quality can be like the difference between a good cassette tape player and CD player — digital being more clear.

But don't think analog quality is poor, because it's not. I got better quality sound on my analog cell phone than on many inexpensive (cheap) telephones I have used in my client's homes, and much better quality than we used to get on $1,200 Motorola police radios when I was a cop.

There are other benefits that make digital phones worth looking at — if they are available in your area — besides just the lower monthly use fees. The phones can do more things for you, such as tell you who is calling before you answer and, because they use computer-type software, can even be reprogrammed later when newer software is written.

Whichever you choose, make sure they will operate with the new "smart charging" accessories. These allow you to power your phone in your car without charging it — unless the charge has dropped to a low level. (Regularly recharging a ni-cad battery which has not been fully discharged will cause it to develop an inaccurate memory, and prevent it from accepting a full charge.) Some chargers, like the one with my Ericsson DP-180, can also discharge the battery before charging it, which helps make the battery last longer.

Monthly service charges

We live in a small market area, and our monthly service charge for one hour's use was $50 a month until recently. In larger markets, like Portland, Oregon, and Seattle, Washington, the same service was $35. That fee recently dropped to $40 in our area, but is still $35 in Portland. With my digital phone, however, it went down to $30 a month for 60 minutes, $50 for 120 minutes. Roaming charges (using the phone outside your "home" area) are about 40% less expensive with digital phones (even when you are in an analog area). That is with Cellular One. Other plans give lower rates for higher monthly usage, and vary from place to place so check with your local service providers.

Jim Coleman was on a 60 minute plan, and exceeded it regularly, so went to 150 minutes for about $80 a month. He likes the freedom of not having to count minutes anymore, because this provides ample time for all his business and personal calls. "If I want to call Pat, or one of my friends in Pennsylvania, I do it whenever I want, now", he says. I also went to a 120 minute plan when I got the digital phone, and have the same feeling.

Selecting a cellular carrier

Selecting a cellular carrier is not difficult. There are only two cellular companies in every location. They are designated A and B. The A system is always a Non-Wireline system, and the B system is always a Wireline system. Each system is assigned the same number of frequencies, so in that sense they are "equal." However, because of digital technology, one carrier can triple the number of users just by installing digital transmitters. We use Cellular One, which is McCaw Communications, now owned partially by AT&T, and is the largest cellular system in North America. But other systems provide quality service, and your choice of carriers is often more determined by where you purchase your cellular phone as dealers usually place their sales with one carrier. If you travel out of your local area much, make sure your carrier can provide uninterrupted service wherever you go, and at a competitive price.

Two years ago, when I first got my cellular phone, I did not think every technician should have one. While I now believe most technicians could benefit from cellular service, and far beyond the cost to you, it still depends on your particular situation.

For example, while we get to talk to 100% of those who call if we answer the phone, I find that only 30-50% of the callers to our business phone leave messages. How do I know? At times, while rebuilding in the shop with my hands up to my elbows in something, I have had the answering device on but monitored the calls. One day while working on a rebuild in the shop I had the answering device on, but was monitoring the calls that came in. I decided I would not bother to stop for salesmen, but would answer for piano technicians, students and tuning clients. Of eight calls that came in that afternoon, not a one left a message! While I am sure that not all were tuning inquiries, I know they were not friends calling to have coffee, since I do not have that many friends who would have called, and we have a separate home phone number which they would have called. Besides, most of my friends know, as Joe Gotta does, that many first-time callers will call and leave a message, then go down the listings in the Yellow Pages calling other numbers. I have returned home, after being gone only an hour, and returned calls to find they have already scheduled another tuner. Upon checking with my local colleagues, on one occasion I found a lady left messages on three technician's machines before finding a guy who was home and scheduling with him. We had all called her back within two hours. Had any of us been home, or forwarded our calls to a cell phone, we would have had a tuning.

Jim Harvey, who does not yet have a cell phone, says "when I go out of town, which is Charlotte, which I don't know very well, is usually when I wish I had one. I can't find a house and it is usually pouring down rain, so I go find a phone booth. It's on the other side of the freeway, and when I get over there it doesn't work." When I talked with Jim about this article, and I related some of this information to him, he said he wanted to know more — and that it just may convince him to get one himself. Let me know what you decide, Jim!

The Tuner

By Paul Monroe

The subject of the last two articles has been "setting the temperament." If you haven't read these articles you will probably be confused and I suggest you obtain the two previous copies of the *Journal* and make a study of what was written.

The last article ended with the M6th interval D#4-F#3. The next note to tune is B3. Tune it to D#4, a M3rd interval. It should have a beat rate approximately .5 bps faster than the M3rd, A#3-D4. The F#3-B3 fourth should have a slight roll.

Move on to the next interval G3-B3, a M3rd. The beat rate of this interval is in between that of its neighbors. It should be slower than G#3-C4 (8.2 bps), faster than F#3-A#3 (7.3 bps), slower than F3-D4 M6th (8.0 bps). The G3-C4 interval, a 4th, should be slower than the G#3-C#4 4th, but faster than the F#3-B3 4th.

The next interval to tune is a M6th. Tune E4 to G3. The beat rate should be approximately 9 bps. Slightly faster than M6th F#3-D#4. Check the B3-E4 4th comparing it to its neighbors A#3-D#4 and A3-D4. There should be no objectionable difference in their beat rates, remembering that as you progress up the keyboard the beat rates should increase evenly and as you progress down the keyboard they should decrease evenly.

Check E4-A3 5th comparing it to its neighbors below, G#3-C#4, G3-C4, etc. For a little bit of advanced tuning at this point, use the 6th-10th test discussed in the last article for each of the intervals of a 5th and compare one to the other. it will help you learn how accurate (or inaccurate) you are in setting your temperament.

For the inexperienced tuner, I believe you are at the most critical point before completing the temperament. Check the M3rd, C4-E4. Is it in line with its neighbors, M3rds, B3-D#4 and A#3-D4? Is the M6th, G3-E4 beat rate in between M3rds, A#3-D4 and A3-C#4? If it is, you are lucky. It usually takes a number of attempts before you can do it on a regular basis. Part of the reason of course, is hammer technique, another subject planned to be covered in future articles.

To complete the temperament, tune Octave F4 to F3. Compare M6th, M3rd, 4th and 5th intervals to be sure the progressing beat rates are even. Check the outside M6th and inside M3rds to see if the M6th beat rate is in between the M3rds, C4-E4 and B3-D#4.

You may think my next statement is facetious; it isn't. It is meant to be real serious. The statement is (don't let yourself get confused) read, re-read and start tuning, constantly referring to these articles and the added notes I am sure you have written by now.

An observation you should have made at this point is that you are constantly comparing beat rates of neighboring intervals. The more mature you become in your tuning, the more intervals you will use for comparison. One of these will be the minor third (m3rd). i.e.: F3-G#3, F#3-A3, G3-A#3, etc. Check the beat rate progression up and down the temperament. If they are uneven it is an indication that one of more of the intervals you have tuned is incorrect. Check and recheck what you have tuned. It will probably save you time later on. A word of caution here, too: don't be in a hurry to change one note before you have exhausted all the checks and tests you have learned. Sometimes you will be surprised which note(s) it is that needs to be changed.

With all that said, I want to introduce you to one more checking and test interval that will be useful in octave tuning. (Octave tuning will be the topic of the next article). This is the 3rd-10th test.

In the octave you have just tuned, the beat rate of the M10th, C#3-F4 should beat slightly faster than M3rd. C#3-F3. The technical reason for this is complex and not an absolute must to know at this stage of your tuning maturity. Attend seminars and conventions where you will learn more and more each time you attend.

Up to this point you have been concentrating on beat rates, comparisons, etc.; let's have a little fun now with chords. The one that follows is one I learned by reading the *Journal*. I use it as a test that may be of help to you, if not now, in the future.

Play notes F3-G#3-A#3-D4 as a chord. You will note there is a m3rd, F3-G#3; a 4th, F3-A#3; M3rd, A#3-D4; M6th, F3-D4. For you musicians you will note also that there is a m2nd and an augmented 4th.

Play this chord and progress chromatically through the temperament. The next chord will be F#3-A3-B3-D#4. You should be listening for an even progression of all the intervals, the m3rds, M3rds, 4ths and M6ths. It won't take much practice for you to hear when one of the intervals is out of line. When you do find one out of line, recheck your temperament using all the other test intervals. If it is close, I suggest you continue on with the octave tuning.

After you have completed your octave tuning, use this chord to check the middle of the keyboard where the beat rates are easy to discern. As usual, the more you practice, the faster you will improve hearing all of the intervals at one time. One added suggestion: to play each of the intervals within the chord separately and then play the whole chord. You will be amazed at how much better your hearing becomes. See you next month.

While admiring the Waukegan chapter's project piano at a meeting, the thought was offered that perhaps an individual tuning pin was a bit different in size than the others in the set. Tuning pin diameters will indeed vary within a set, and we can use this variance to our advantage in restringing a piano.

Tuning pin manufacturers claim that their pins are made to the tolerance of .001". Even the best sets of pins have an actual variance of at least plus or minus .001" yielding a spread of at least .002" within the set.

For example, a set of 2/0 pins has a nominal diameter of .282". The actual diameter of the pins can vary from just over .283" to just under .281". While this .002" variance may seem insignificant relative to the .282" diameter (0.7% for you mathemagicians), that .002" is very significant relative to the amount of underdrill for the tuning pin.

I typically drill a .266" hole for a nominal .282" pin giving an underdrill of .016". That .002" variance now represents 12.5% of the underdrill amount and gives the potential for a significant difference in torque from pin to pin.

If you combine the variance in pin diameters with the even slight variance in hole diameters that is unavoidable in drilling the block you can see the potential for random, significant differences in torque between pins. Since the various diameters of pins are randomly distributed in the box, you can drive a skinny .281" pin into a large hole followed by a fat .283" into a small hole, and end up with a 20% or greater difference in torque between neighboring pins. This not only makes the piano unpleasant to tune, but can lead to some nasty surprises if you like to drill your blocks dangerously tight.

How can we use this variance to our advantage? Through a procedure I call "micing the pins" where I measure each tuning pin in the set with a micrometer and sort them by size. It takes less than half an hour and gives me three advantages.

- It allows me to concentrate on drilling uniform holes in the block from end to end. None of this trying to drill holes smaller in the bass and bigger in the treble business. Just nice even drilling across the entire block.
- It allows me to put the larger pins in the bass, where the per string tension is greatest, for consistent torque across the scale.
- It yields more consistent torque from pin to pin within a section. It's one of those little details in restringing that can make a piano tune easily-instead of like a restrung piano.

To mic a set of pins you'll need a micrometer and five containers (I use old tuning pin boxes). I have a micrometer that I recently bought from one of our friendly suppliers that has a digital readout that is accurate to .0005" (half of one thousandth of an inch), just right for measuring pins. Label the boxes as shown below for 2/0 pins with a nominal diameter of.282".

Label	For pins measuring
3	.283"
2 1/2	.2825"
2	.282"
1 1/2	.2815"
1	.281"

Rules for micing pins:

- Measure each pin once in the middle of the threaded portion.
- After measuring, set (don't throw) each pin into the appropriate box.
- If you can't decide which box to put it in, put it in the smaller size.
- If you drop a pin on a concrete floor, throw it away.
- Place pins measuring larger than .283" (there might be a few) aside for use on the first few notes in the bass.
- Throw pins below .281" away, or start a collection. Just don't use them.

Once you've miced the set, you'll have a bell-shaped distribution curve of pins in your boxes. The most pins will be in the box with the nominal dimension (.282"), and the fewest will be at the extremes. Before stringing, count out the number of big pins to save for the bass. Count the number of super biggies (>.283"), and .283s that you ended up with and then count out enough .2825s to do the rest of the bass. Put them in the box the set originally came in. Be sure to include any wound strings of the tenor bridge and add a couple of extra pins just in case. Keep all of the bass pins in their individual boxes and set them aside. Then you can start stringing the plain wire in the tenor with the rest of the .2825s and work your way up. When you string the bass use the biggest at the bottom.

For a conventional micrometer, set and lock it at the nominal dimension and label the boxes as follows:

- No start — pin too big to even start through.
- Stick — pin starts but sticks, won't go through.
- Tight — pin will pass through with resistance.
- Easy — pin falls through with no resistance.

Buy the best tuning pins available. I prefer Yamaha and Denro pins. They are more consistently sized and don't suffer from reverse taper (the bottom of the pin is fatter than the top) as much as cheaper pins. I always use blued pins. I think they feel better, they stay new looking longer, and that's what was originally used on the pianos that I'm restoring. Nickel-plated pins, a relatively recent change, along with glossy sharps, give a piano a cheap appearance, in my opinion.

Techno-Stuff

By Richard Anderson, RPT
Feature Writer
Chicago Chapter

PTG Review

Dedicated To PTG News • Interests & Organizational Activities

PIANO TECHNICIANS GUILD

Of Snow & Men

Keith Bowman, RPT
S. Central PA Chapter

Now that the flowers have bloomed and the grass needs cutting, I can talk about it. The snow. If you live in the Northeast as I do, you probably still cringe when you hear that word. Back in March, when we held the PA State Convention, I experienced one of the worst fears a seminar chairman can have. It was called Snowstorm Number 16. It promised as much as two feet in the Harrisburg area. And it was going to start less than 24 hours before most registrants needed to drive to the convention.

It seemed hopeless for a while. Just two years of planning down the drain. Just thousands of combined hours, not to mention the sacrifice of chapter technicals for the last year.

But, somehow, Mother Nature relented just a bit. We only got 9 inches and it came in a manner that allowed the plows to keep up with it. To the 40 some concerned callers I could say, "Yes, we're on. If you can get out of your own area, you can make it here." And people came. Everyone was sick of being intimidated by our harsh winter. With the exception of some of our friends in New England, where the storm lingered, almost everyone showed up—some late, but what great fellowship we had!

But now, to the heroes of this story, The members of my chapter, who went above and beyond to ensure a successful event. And I mean all the members. We had 100% active participation as the host chapter. Of

Continues page 49

From The Trade Relations Committee Chair...

Thoughts on Business Ethics

While pursuing my duties as chair of the Trade Relations Committee, I was asked many times for an opinion on many different situations that various technicians have encountered with dealers. One such inquiry I had related to the members in the *Journal* some time ago. The one I will relate now is also a very unique situation. I have found that trade relations get into many other areas, one of which is business ethics.

A very competent and highly ethical technician asked me for a solution to a problem he encountered. This technician, an RPT, did some work for a local dealer, along with other RPTs. However, this person was paid at a higher rate than the others. This situation was causing this individual much concern. After listening to this problem, I asked for some time to consider it, as I could not recall any similar situation that I had encountered. So after some thought, this is what I said, "When there are no guidelines or precedent to look at, then the fundamental rights of an individual become very helpful." Here we will address the rights of three parties:

Number one: The technician who presented the question to me.

Number two: The dealer who owned the store.

Number three: The other technicians that do work for this store.

Number one: As a technician, you have the fundamental right to work and command the highest compensation possible. (Some would call it a duty.)

Number two: The dealer has the fundamental right to offer payment to you of anything he/she chooses, on a contract basis.

Number three: The other technicians have the fundamental right to negotiate a higher pay scale. (Perhaps ask what they need to do to receive higher pay.)

All parties have the fundamental right to terminate their working relations with each other.

I sincerely hope that this advice and reasoning has been of help to this technician; this profession, this organization, and this country truly needs more people such as this. What do you think?

Jack Wyatt, RPT
Trade Relations Comm. Chair

PASSAGES

In Memory

Peter Anthony Hugo
December 25, 1925
February 12, 1994

Peter Anthony, a healthy baby boy, was born to the Hugo family who farmed in a tiny community near Three Hills in south central Alberta. Peter had three brothers and two sisters. He enjoyed work on the farm, but by age seven it was apparent that Peter's sight was beginning to degenerate; a process that would continue until it was lost completely in his 40s.

At the age of 20, Peter left the family farm to begin training in piano tuning and repair at the Ontario School for the Blind in Brantford, Ontario, Canada. He trained there for one year before moving to Toronto to serve an apprenticeship in the Heintzman Piano factory. Peter was a big, handsome and gentle man — a commanding presence, yet kind to all. Impressed with Peter's abilities and diligence, the Heintzman Piano Company hired him for service work in Toronto where he worked until the call of the West returned him to Calgary in 1950.

There he continued his relationship with Heintzman, working with the Calgary store for two years. He then worked with the Alberta Piano Company doing both tuning and work in their rebuilding shop until the mid-70s. His proximity to home and the flexibility of the piano profession allowed him to return to enjoy summers of work on the farm. This continued until marriage, a growing family and an expanding client base required full-time residence in Calgary.

In 1955, Stephanie came into Peter's life through a meeting arranged by their parents who had become friends through church activities. This was done under the guise of watching that still relatively rare and, as yet, innocuous new technology called television. The attraction for them was more than the new technological wonder and in 1956 Peter and Stephanie Hugo became one in their marriage commitment. At one time, good things did come from television!

The following year their first daughter was born, followed closely by a son (killed in an avalanche in 1988) and then twin boys. The 60s were spent raising a young family and servicing an ever-expanding private customer base. It was during this time that Peter lost the last vestiges of his sight. Stephanie was both faithful wife and business partner as she drove Peter to his appointments and developed relationships with his customers. It was a successful partnership of two gracious and giving people. They were both active participants through many years of PTG conventions and chapter functions.

The 1970s saw Peter move to the Calgary Baldwin store as well as take on the contract for the University of Calgary. He also began a piano rental business that over a 12 year period would expand to 40 pianos.

In 1972 the last of their five children, Lisa, was born. Peter was a man who loved his family; Stephanie relates that his one regret was that he never got to see his last daughter grow up and would often ask her to describe Lisa as she changed. Peter was a man who loved God. He also loved music and expressed his love for God through the choir in the Catholic church they attended.

In the mid-1980s, Peter was diagnosed with cancer. Treatment was given and the cancer went into remission for five years and was successfully treated again four years ago. Fall of 1993 saw a resurgence of the illness that took his life.

Through the trials and troubles of life, Peter kept a positive attitude. I'm sure he had his down times like we all do, but he kept his ship of life on an even keel. He looked at the horizon and not the waves with faith that God was in the boat with him. He made his good reputation on his own, not on the backs of others. Peter was a gentleman. May we in this self-centered society follow his example of courtesy and selflessness. Peter Anthony Hugo, RPT; honored colleague and friend.

James Lampiasi
February 16, 1915
March 25, 1994

Friday the 25th of March, we said the last good-bye to James Lampiasi. Jimmy, who had infantile paralysis at 18 months of age, overcame his handicap in all his endeavors.

Jimmy was born on February 16, 1915. At the age of 12, he had his own radio show at station WBMS in Hackensack, New Jersey, where he played piano and performed some of his own songs. He worked for 29 years for the Armed Forces Radio and Television Service in quality control, as producer of his own shows, and he also produced shows for many of the top entertainers. He wrote arrangements for Jan Garber and other popular bands and orchestras. Frank Sinatra, Roy Rogers, Dale Evans and others recorded some of his original songs.

Jimmy learned piano tuning and technology at Los Angeles Trade Technical College. He hardly ever missed Los Angeles meetings, seminars, and conventions in order to learn and improve his knowledge. With his strong left arm, and with an underdeveloped right arm, he had to invent ways to do jobs that even for the regular craftsman brought forth challenges.

Jimmy was married to Sarah for 53 years, had a daughter named Coralie, and three grandchildren; he treasured the times together with them all.

He was a good friend through the nearly 40 years we knew each other, and all of us will always miss him.

P A S S A G E S *Continued*

Reclassifications to RPT

April, 1994

021-Boston, MA

Christopher Brown
194 Cambridge Turnpike
Concord, MA 01742

454-Dayton, OH

Kathryn E. Shaw
1066 W. Sparrow Road
Springfield, OH 45502

895-Reno, NV

Jane I. Green
1572 Lander Sreet
Reno, NV 89509

972-Portland, OR

James R. Schmitt
4002 S.E. Tibbetts
Portland, OR 97202

Resignation

Dear Members of The Piano Technicians Guild:

With regret I have decided to end my membership in PTG. This decision was made because my life has changed significantly and I do very little work as a Piano Technician.

Thank you for the help you have given me during the twenty four years I have been a member, and this includes every member. PTG is the depository of our collective knowledge of Piano Technology. We are a living book. It has been a great privilege to be a part of this continuing process. Added to this, the friendships developed over the years with fellow PTG members are of incalculable value and will continue to be so.

During the past several years I have become a teacher of The Alexander Technique, and as such have taught several classes at Regional and National Conventions on applying the Technique to our work. It has been gratifying to have been able to return to our members useful knowledge in this way. Please feel free to call on me at any time in the future to present other classes at PTG Conventions on The Alexander Technique or to give private Tuning Lessons applying the Technique to individual work. I would be most happy to do so.

Best wishes to members of PTG for continued prosperity and happiness.

Sincerely,
Wade Alexander

With Sincere Thanks,

At this time I wish to offer my deepest thanks and gratitude to many individuals, and to PTG itself, for my recent accreditation as an RPT (PTJ, 4/94, page 62). An exhaustive tribute would fill an entire *Journal* without being fully comprehensive, thus this brief effort must suffice.

Certainly abundant acknowledgment is due the myriad sources of instruction and encouragement I have received, locally and elsewhere, as well as the numerous *Journal* writers of past and present, my examiners, and the Institute Committee personnel at the conventions I have attended, including Gary Neie, who did such an outstanding job directing last year's convention. Special thanks are due to

Of Snow & Men

continued from page 47

course, we did more than "host." Like bringing in pianos two evenings before to beat the impending storm driving to UPS twice to find missing exhibit materials, completing Technical Exam equipment three days before, researching historical temperaments for a special recital, planning a devotional service including a brass quintet (three players from the chapter), creating a tuning class to replace one cancelled, and much more, including instructing, coordinating a hands-on workshop, and overseeing RPT exams and tutoring!

I am grateful to many people for their essential contributions, but my focus here is my chapter. I am proud to be a member. We pulled together and made it through the weekend that almost wasn't.

Keith Bowman, RPT
S. Central PA Chapter

Jim Pierce, now retired from the profession, who was the first piano technician I ever met and my initial source of knowledge; to the late Ollie Braymer, who was the linchpin of the Northern Virginia Chapter for many years and who taught me much of what I know about piano technology; and to PTG President Fern Henry and her husband, Bill Spurlock, for their tremendous encouragement and support in addition to the magisterial teaching they have provided at PTG functions and in Journal articles, as well as for their caring and humane attitudes towards Associates, a major inspiration to me. Most of all, I must thank God Himself for giving me the ability, skills, ethics, instruction, and connections that made the upgrade possible. I can only hope that I will prove worthy of my title, and that I will manifest the kindness towards future new RPTs that I myself received.

Andrew Margrave, RPT
Northern Virginia Chapter

Boston Chapter Holds First Associates' Day

RPTs share time, knowledge and experience with Associates at Boston University Music Department

On Saturday, April 9, the Boston Chapter held its first Associates' Day. With seven Associates and five coaches participating, almost a one-on-one instructor ratio was achieved. Facilities were provided by the Boston University Music Department, through the good offices of Chief Technician Martin Snow.

During the morning, each participant was assigned a practice room piano and allowed to practice whatever aspect of tuning—e.g. temperament, unisons, high treble—they felt least confident about. The RPT coaches, including CTEs Christine Lovgren and John Stebbins, critiqued the tunings at short intervals during the three or so hours given to this part of the seminar.

The afternoon was devoted to action regulation and alternated between group and individual sessions. The whole group discussed general regulation problems and issues specific to the PTG Technical test. Afterward, each participant was given an action model to regulate under the supervision of an instructor. Coaches corrected errors as they were made, and addressed both theoretical aspects of regulation and practical problems of efficient time use during the course of the regulation. All coaches were either experienced Technical Examiners or professional piano technology Instructors. The Boston Chapter and the North Bennett Street School provided action models.

It was very good to see a group of busy RPTs share their time, knowledge and experience with Associates. The Boston Chapter hopes to continue offering these Associate Day seminars in the future, and to use the experience thus gained, to develop a full weekend Action Regulation Seminar to be offered at a future Regional Convention. The rest is up to Associates themselves. It may be difficult for many working technicians to reveal what they don't know to other technicians. However, ignorance is not a personal failing—the failure to remedy it when offered the opportunity, is.

Israel Stein, RPT
Chairman, Technical Testing
Boston Chapter

EVENTS CALENDAR

All seminars, conferences, conventions and events listed here are approved PTG activities.

Chapters and regions wishing to have their function listed must complete a seminar request form. To obtain one of these forms, contact PTG Home Office or your Regional Vice President.

Once approval is given and your request form reaches Home Office, your event will be listed through the month in which it is to take place.

Deadline to be included in the Events Calendar is at least 45 days before the publication date,;however, once the request is approved, it will automatically be included in the next available issue.

July 6-10
37th Annual PTG Convention and Technical Institute
Hyatt Regency Crown Center/Kansas City
Contact: PTG Home Office
3930 Washington
Kansas City, Missouri 64111-2963
Phone: 816-753-7747
Fax: 816-531-0070

September 24
Pomona Valley Annual Seminar
Clearmont Methodist Church
Contact: John Voss
2616 Mill Creek Road
Mentone, CA 92359
909-794-1559

October 6-9
Ohio State Conference
Cleveland, Ohio
Contact: Janet Leary
18817 Hilliard
Ohio 44116
216-331-8126

October 13-15
New York State Conference
Sheraton Inn
Syracuse, NY
Contact: Paul Kupelian
PO Box 162
Constantia, NY 13044-0162
315-623-9484

October 27-30
Texas State Association
Sheraton Inn
Wichita Falls, TX
Contact: Dale Probst
4447 Cunningham
Wichita Falls, TX 76308
817-691-3682

November 3-6
North Carolina State Conference
Radisson Hotel/High Point, NC
Contact: Evelyn Smith
1041 S. Aycock Street
Greensboro, NC 27403
919-230-1783

New Members In April

REGION 1

021-BOSTON, MA

JOHN L. BIANCHI
19 TIFFANY CIRCLE
MILLBURY, MA 01527

064-CONNECTICUT

DARRYL L. GLOVER
19 CROSS ROAD
CHESTER, CT 06412

190-SOUTHEASTERN PA

LYNDON N. MCNALL
583 COUNTY LINE RD.
RADNOR, PA 19087

191-PHILADELPHIA, PA

ROGER W. KLING
118 LORETTA LANE
BEAR, DE 19701

DAVID G. TENNETT
261 TWIN OAKS DRIVE
PERKASIE, PA 18944

REGION 2

274-CENTRAL NORTH CAROLINA

STEPHEN H. HAMDEN
5808 OLD OAK RIDGE RD.
GREENSBORO, NC 27410

292-PALMETTO, SC

WILLIAM C. HANNA
1512 PINE BAY ROAD
LAKE CITY, SC 29560

296-WESTERN CAROLINAS, NC

BOB B. PAGE
1024 OLD STONE CHURCH RD., #322
CLEMSON, SC 29631

301-ATLANTA, GA

ROGER L. AYCOCK
2495 DOROTHY DRIVE
MARIETTA, GA 30060

337-SOUTHWEST FLORIDA

PHILIP J. PENROSE
420 48TH STREET, N.
ST. PETERSBURG, FL 33713

DON A. STEVENS
10419 TARA DRIVE
RIVERVIEW, FL 33569

352-BIRMINGHAM, AL

CHARLES T. DENNARD, JR.
4004 10TH AVENUE, S.
BIRMINGHAM, AL 35223

381-MEMPHIS, TN

BOBBY F. BELUE
603 E. 4TH STREET
TUSCUMBIA, AL 35674

REGION 3

756-EAST TEXAS

ANGELA HAYS
RT. 1, BOX 362
BEN WHEELER, TX 75754

761-FORT WORTH, TX

GRAHAM A. JENKS
1125 MELISSA DRIVE
ROANOKE, TX 76262

771-HOUSTON, TX

SCOTT P. AARONS
1600 JAMES BOWIE DRIVE
BAYTOWN, TX 77520

791-NORTHWEST TEXAS

AL HARDIN
3404 89TH STREET
LUBBOCK, TX 79423

REGION 4

454-DAYTON, OH

DAVID M. STEIN
2179 LAKEWOOD AVE.
LIMA, OH 45805

REGION 5

501-CENTRAL IOWA

EVAN C. BENNETT
RR 2, BOX 155
OTTUMWA, IA 52501

511-SIOUXLAND

KRISTOPHER KUNZE
5033 ORLEANS AVE., #2
SIOUX CITY, IA 51106

553-TWIN CITIES, MN

MARY H. KOPET
1983 FIELD AVENUE
ST. PAUL, MN 55116

MARLENE K. PETERSON
10151 LOCK BLVD.
HASTINGS, MN 55033

571-SOUTH DAKOTA

STEVEN T. OMAN
207 W. 41ST STREET
SIOUX FALLS, SD 57105

R. SCOTT SCHOPPERT
3511 MATTHEW
SIOUX FALLS, SD 57103

631-ST. LOUIS, MO

PAUL W. HARRIS
5912 MCPHERSON AVE., 3E
ST. LOUIS, MO 63112

REGION 7

972-PORTLAND, OR

LAWRENCE J. GOSS
11651 NW VALLEVUE COURT
PORTLAND, OR 97229

974-EUGENE, OR

JEFFREY T. HICKEY
1781 ROY STREET
COOS BAY, OR 97420

PTG Foundation
Mission Statement

"The Piano Technicians Guild Foundation is formed to support the goals of PTG by preserving and displaying historical materials and providing scholarships and grants for piano performance, study and research."

"The Upright Pianoforte"

Figure A

Figure A: 'Lyraflugel', by H. Ostermann, in Berlin, circa 1840. Berlin, Hochschule fur Musik, No. 811, Pedals: 'Una corda' and Forte. Height, 225 cm.

Figure B

Figure B: Oblique stringing in a 'Lyraflugel'. By H. Ostermann. Berlin, No. 811.

—from the book *History of the Piano Forte* by R.E.M. Harding. This volume, part of the library of William Braid White, was donated to the Piano Technicians Guild Foundation Museum and Archives by Fred Odenheimer.

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

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

There's Still Time!

Steve Brady, RPT • Institute Director

Another year has come and gone, and it's already convention time again. Many of you have already registered to attend the 37th Annual Convention and Technical Insititute in Kansas City next month, but some have yet to do so. If you haven't registered yet, let me take this last opportunity to encourage you to take the plunge.

I will never forget the first annual convention I was privileged to attend. I was about a year or two out of piano technology school and could barely scrape together the money to drive from my home in Arizona to the convention in Las Vegas. Staying at the convention hotel was financially out of the question, so I found a much cheaper motel a few blocks away, and ate at the least expensive place I could find. But what a fabulous experience that convention was! It was so much grander and exciting than the regional conferences I had attended. I looked at the instructors and other leading members of PTG, and saw a vision of what I could beome, and of what a great profession ours could be. I learned that I had received excellent training initially, but I also started to glimpse just how much I didn't know, and how much I needed to learn to become like my role models. I returned home positively energized and bursting with new ideas and dreams.

Although many years—and conventions—have passed since that first convention almost twenty years ago, the annual convention experience has continued to be a source of renewal and inspiration for me. I have often reflected that a rather large part of the success I have at this point has resulted from attending these annual conventions as often as possible.

Just consider the many benefits gained by those who attend the annual convention.

The classes themselves are certainly a phenomenal benefit. Take just a moment and look through the convention brochure again. With the excellent lineup of topics and instructors, you will surely find just the classes you need to fill the gaps in your education and become a more complete skilled artisan. Whether you need some advanced theoretical ideas to enhance your practical skills, or some hands-on experience (from basic to advanced), there is plenty to choose from. Whatever your level of skill and experience, you will find more than enough challenging classes to keep you learning for the entire 3 1/2 day Institute.

Besides the classes, you have the opportunity to rub shoulders with colleagues from all over the continent, and even from around the world. This networking and the resulting friendships provide a support system which can only strengthen your business through referrrals and provide technical help whenever needed. Most of us feel that some of the best information we get at conventions comes from impromptu gab sessions with other technicians.

Third, the trade show gives you an opportunity to see and purchase the exact tools you're looking for, and to learn about the lates developments in both pianos and supplies for piano technicians. This is an indispensable part of the convention experience for most of us.

Finally, who says you can't have some fun while you're at it? Kansas city is a beautiful place with a number of attractions for you and your family. Catch a baseball game, eat some world famous barbecue, take a lazy riverboat ride or enjoy some great jazz. Kansas City has all these things and much more! One unique feature found only in Kansas City is the PTG Home Office. This year we are featuring guided tours of the Home Office facility, including the PTG Foundation's new Museum of Piano Technology.

All these things can only benefit your business and, therefore, your livelihood. The convention experience will only increase your pride in what you do, and bring back the excitement about your work.

There's still time to take advantage of this marvelous opportunity, but you must act soon. Why not call the PTG Home Office right now, at 816-753-7747 and register for the Kansas City convention? You'll be glad you did!

Tours of the PTG Home Office will be offered during the annual convention on Wednesday, July 6 and Saturday, July 9.

Expanding Horizons

Cultivating Artisans

PTG Marketing Tools

Brochures:

- How should I take care for my piano?
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- PTG Tuning Exam Source book

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AUXILIARY
EXCHANGE

Dedicated To Auxiliary News and Interests

Tempting Recipes & Much More

Have you ever received those letters in the mail announcing the sale of a newsletter that tells you where to sit on the airplane to be safe from accident, or what to use to clear up a malady of some sort that you don't know how to heal or what to use to take a stain out of a garment? Yes, we've all received those letters but have you ever sent them a check for the newsletter and then when it comes you still don't have the answers to all of the questions they asked when they asked you to send them a check!

Well, I'm going to do the same thing to you! So throw a rotten egg at me! What prompted this was the fact that I was preparing to send some scholarship sale items out to some of our members today and one of them asked for our Cook Book. Remember the cook books?? Well, I started leafing through it and read a wealth of knowledge that I had forgotten was in there. (I should use that cook book more often.)

Do you know:

- How to drip-dry garments faster and with few wrinkles?
- What to add to food when it is too salty?
- What to add to food when it is too sweet?
- What to add to food when it is too sharp?
- How to pick up broken slivers of glass?
- What to do if a zipper sticks?
- How to prevent the salt shaker from clogging up, especially in summer?
- How to revive wilted flowers?
- How to keep cheese from drying out in the refrigerator?
- How to keep your new white tennis shoes lasting longer?
- How to cut a pie into five equal pieces?

Well, there you have it, but I'm not going to tell you the answers either because I think that you should buy a cook book from the Auxiliary and find out. Now those of you who already own a cook book, don't tell the others the answers. Just tell them that they should buy a cook book and help the scholarship fund grow so that we can sponsor more young piano students in this country who, in turn, use a Guild Tuner, and then they will find out the answers to all those questions above and more because there is a lot more information in that cook book than recipes. It even tells you how to figure our what day of the week your birthday falls on in the year 2028, just in case you want to plan a celebration that far ahead.

And then there is a whole page devoted to he Metric System. Now I know that my tuner spouse says that the metric system is the easiest to use and that the whole country should change over to it, But after you've been raised on cups, pints, and quarts; inches, feet, and yards, it's rather hard to change an old habit. But it's in there if you want to convert to it. Oh yes, and those two pages on the every day guide to herbs is worth the price of the book alone. Since I do not cook with any salt, I use those twelve herbs and many, many more. Have you ever had saffron rice? To die for! I learned how to make that from my southern friends.

I want to thank all of you personally who submitted recipes for this Auxiliary Cook Book. I have tried a number of them and have had to substitute other ingredients for eggs, whole milk and the like but find the end result is just as tasty. When I make the recipe, I am always thinking of the person who presented it and that brings us closer together.

Now that all of your mouths are watering and you just <u>have</u> to have the answers to the questions in this column, get your check book out and write a check to PTGA for

eight dollars and sent it to Marie Eumurian, 1634 Barlow St., LaCrosse, WI 54601 and she will see that you have a cook book rushed to you immediately. And thank you for your support.

Phyllis
Phyllis Krahmer Tremper
PTGA President

My quotation for this month is by Edward John Phelps "The person who makes no mistakes does not usually make anything."

Kansas City Is Looking For You!..

We here in Kansas City are getting more and more excited about having you here with us again. I know that President Phyllis has prepared a schedule of some of our most exciting places and events.

If you are sensitive to hot sun and extreme temperatures, you may wish to bring some kind of head covering. Our Missouri sun can be blistering.

We are visualizing rivers well within their banks during your stay with us. The general forecast seems to predict a better summer, rain-wise, than last.

And yes, the Hyatt Regency is still standing, although don't expect things to be just as they were before. The goal appears to be "fruit basket upset" every year or so.

We'll look for you!

Lue Preuitt

Basic Parliamentary Procedures Offered At Convetion

Help! Get me through this meeting! That will be the emphasis in a class on basic parliamentary procedure to be offered at the convention in Kansas City. We will talk about duties of officers, and, just as important, duties and responsibilities of members.

Have you ever wondered, "Where is this motion going"? We'll track one. We'll find out why this motion is "in order" and that one is not.

As much as we can cover in the time allotted will be "on the agenda." We may even have a little quiz on the subjects which have been discussed!

If you own a copy of Robert's Rules of Order, Newly Revised, please bring it along so you can mark references. I find a highlighter a valuable tool in such classes.

Thanks to all our PTG Friends...

I would like to say a big "thank you" to many of our PTG friends who have called and written since hearing of Bill's stroke and illness. We are faring quite well, with the love and care of "Hospice" and our own wonderful family.

It has been very gratifying hearing from our PTG friends — we appreciate the concern and support immensely.

Most sincerely,
Marge Moonan

Our pages need your input...

The information that can go into the Journal reaches our entire membership, and most importantly, those who are considering becoming part of the Auxiliary.

Your stories about travels, conferences and other organizational participation are vital to those lines of communication...*so go ahead!* Jot down a story or thought you'd like to share...

These are your pages and your input is important!

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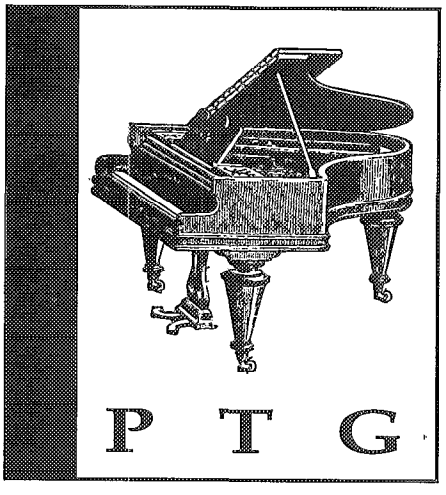
Expanding Horizons



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PTG 37th Annual Convention & Technical Institute

July 6-10, 1994

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Kansas City, Missouri

See You Next Month In Kansas City!

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

WHEREABOUTS OR AVAILABILITY of any Leckerling pianos. Contact Bill Leckerling, 802-425-2736, RR1, Box 1657C, Charlotte, VT 05445

TECHNICIANS ONLINE: Compuserve, Internet, Prodigy, AOL, etc. Assembling a directory to facilitate technician connectivity. Send your E-mail address to John Baird, RPT, Compuserve 71023, 2217 or 217-429-5651

COMPUSERVE ONLINE CONFERENCE: 3rd Thursday each month, 10-11 p.m. EDT in the Music/Arts+ Forum (Go Musicarts), room "The Music Industry (Rm. 13)." For leaving messages on an on-going basis use the bulletin board in the same forum in the section "The Music Industry." John Baird, 71023, 2217

Journal Editor Wanted

Piano Technicians Guild is accepting applications for the position of Journal Editor.

A job description is available on request from the PTG Home Office.

Interested parties should submit a written resume before September 31, 1994.

Phone: 816-753-7747
FAX: 816-531-0070

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BUSINESS AIDS ORDER FORM

	Qty.	Total
Billing Pads* 2-part with logo, 50 per pad: 1/$4.00, 3/$10		
Service Stickers* Red and blue with logo: 100/$6.00, 200/$9.00, 500/$20.00		
Personalized with your name: 500/$50.00, 1000/$90.00		
PTG Business Cards: 500/$45.00, 1000/$70.00		
Reminder Cards*:100/$12.50, 600/$60.00		
VERSIONS: ____A1 ____A2 ____B1 ____B2 ____C1 ____C2 ____D1 ____D2 ____E1 ____E2 ____F1 ____F2		
Logo Printing Sheet *(Round RPT logo): $1.00		
Book Mark*: 100/$8.00, 500/$35.00, 1,000/$60.00		
Service Record*: 100/$15.00, 500/$65.00, 1,000/$115.00		
Dealer Service Tags*: 100/$12.00		
Piano Service Appointment Forms, green, 6-part: 100/$22.50		
PUBLICATIONS		
"How Often Should My Piano Be Serviced?": 50/$20.00, 100/$35.00, 500/$150.00		
"How Should I Take Care of My Piano?": 50/$20.00, 100/$35.00, 500/$150.00		
"The Special Care and Maintenance of the Teaching Piano": 25/$9.00 100/$35.00, 500/$150.00		
"Pitch Raising" Technical Bulletin: 50/$12.00, 100/$20.00, 500/$90.00		
"Regulation" Technical Bulletin: 50/$12.00, 100/$20.00, 500/$90.00		
"Humidity Control" Technical Bulletin: 50/$12.00, 100/$20.00, 500/$90.00		
"Voicing" Technical Bulletin: 50/$12.00, 100/$20.00, 500/$90.00		
"Finish Care" Technical Bulletin: 50/$12.00, 100/$20.00, 500/$90.00		
"Rebuilding" Technical Bulletin: 50/$12.00, 100/$20.00, 500/$90.00		
"Guide to Resources": $20.00		
"Classified Index Supplement," compiled by Merle Mason (covers 1979-1983)		
Member: $12.50		
Non Member: $15.00		
"Cumulative Index Supplement," compiled by Danny Boone (covers 1984-1989):$5.00		
"The Calculating Technician," by David Roberts: $13.00		
"The Piano Action Handbook," compiled by Randy Potter		
Member: $8.00		
Non Member: $10.00		
"Guidelines for Effective Institutional Piano Maintenance," by the C&U Technicians Committee: $5.00		
PTG Technical Examination Source Book: $29.00		
PTG Tuning Examination Source Book: $29.00		
MERCHANDISE		
Journal Binders (Holds one year's issues): 1/$6.50, 2/$12.00		
RPT Membership Pin* lapel type: $5.00		
RPT Tie Bar* with gold clip: $5.50		
Coffee Mug "The Piano Technicians Guild, Inc." (blue on white ceramic) 1/$4.00, 4/$13.00, 6/$22.00		
Pedestal Mug (clear glass) 10oz.: 1/$4.00, 4/$13.00, 6/$22.00		
Subtotal		
Shipping & Handling (See below)		
Missouri residents add 6.475% state sales tax		
Total enclosed		

Please charge my _____Visa _____MasterCard/Card #_____ Exp. date:_____

Name: _____ Are you an RPT? _____ Member # _____

Address: _____ Phone: _____

City, State, Zip: _____

*Items sold only to Registered Piano Technicians

Shipping and Handling: Brochures, Technical Bulletins, Reminder Cards: $2.00 per 100 / $1.00 per 50 All other items add $2.00 each

Piano Technicians Guild, 3930 Washington, Kansas City, MO 64111
(P)816-753-7747, (F)816-531-0070

PianoDiscussions™

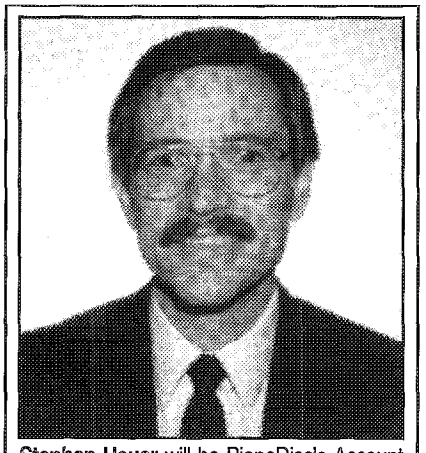
June 1994

News From The World Of PianoDisc

A new Account Exec for PianoDisc's New South

The World of PianoDisc keeps getting bigger, and so do we...introducing **Stephen Heuer**, PianoDisc's newest Account Executive. Steve comes to us from the political arena, having previously worked for California State Senator (now Congressman) John Doolittle as a campaign manager and spokesman. "His professional experience in public relations, the representation of a constituency and the 'selling' of an intangible product will be most effective in helping our PianoDisc dealers and their sales staff sell PianoDisc products," says Tom Lagomarsino, Vice President / Marketing. "We're pleased to have him aboard."

So, let's all welcome Steve to the PianoDisc family. He may not be in politics anymore, but he's got our vote!



Stephen Heuer will be PianoDisc's Account Executive for the Southern Marketing District.

PianoDisc Installation Training 1994

- August 10-13
- September 21-24
- October 12-15
- November 9-12
- December 7-10

Continuing Education Series 1994

- August 8-9
- October 10-11

*Tuition for the Installation and the Continuing Education seminars is **free**, but a $50.00 refundable deposit is required for confirmation. The PianoDisc Continuing Education Series seminars are restricted to PianoDisc certified technicians in good standing. For more information about attending a PianoDisc Installation Training seminar or a Continuing Education seminar, call PianoDisc at (916) 567-9999 during regular office hours.*

Our Address

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4111 North Freeway Blvd.
Sacramento, CA 95834

Telephone Numbers

Phone: (916) 567-9999
Fax: (916) 567-1941

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

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

Newest music releases feature Steinway artists

The PianoDisc Music Library is getting bigger, too. This month we'll be releasing five new PianoDisc diskettes, two of which are the start of a whole new PianoDisc Music Library category! This new category, the Artist Series, features performances by many talented and well respected artists. Each diskette in this new series will feature one such prominent artist, and these recordings are sure to be collector's items someday!

Following are a list of the new releases. For those of you participating in the Subscription Service, these are the diskettes you'll be receiving shortly: PD 6004 "Artist Series: Jessica Williams", PD 3016 "Artist Series: Andreas Klein", PD 3017 "The Great Composers: W.A. Mozart" (Classical Series), PD 2407 "Unforgettable" (Candlelight & Wine Series), and PD 12402 "I'll Be Seeing You" (Candlelight & Wine Series).

PD 3016 and PD 3017 feature performances by Steinway Artists Andreas Klein and Laura Spitzer. Steinway has provided PianoDisc with a Steinway D concert grand for Steinway artists who wish to immortalize their performances in the PianoDisc Music Library. So, you can look forward to even more new and exciting diskettes soon!

"We're goin' to Kansas City, Kansas City here we come..."

Elvis probably won't be in Kansas City next month (rumor has it that he hasn't been feeling well lately), but we will be. Why? The 37th Annual PTG Convention and Technical Institute at the Hyatt Regency Crown Center in beautiful downtown Kansas City, that's why. You <u>are</u> going, aren't you? You didn't forget, did you? Naahh...

Well, PianoDisc will be there in force. On **July 9**, installation technician **Mark Burgett** will give interested technicians a "Technical Look at the 21st Century Player Piano", in the Van Horn B room starting at 8:00 AM. This interactive class is an overview of the PianoDisc system for PianoDisc techs and those who would like to be one. It will cover such topics as basic adjustment of the PianoDisc system, basic troubleshooting and a whole lot of very informative and useful information. Even if you're not a PianoDisc tech, you should probably come anyway—with thousands of systems already installed across the fruited plain, chances are you'll run into one soon, if you haven't already.

The rest of the PianoDisc crew will be in **Booth 67**, demonstrating our product line. So don't pass us by—there's always something new and exciting at our booth!

Oh—and if you do see Elvis, tell him Buddy Holly's been looking for him...

Tech Gazette

Yamaha Service

George Gershwin Plays Disklavier™

An unprecedented recording of piano roll performances by legendary American composer George Gershwin was featured among new PianoSoft selections introduced at the 1994 Winter NAMM Show.

The new Gershwin disk, "*Gershwin Plays Gershwin*", features such classics as "Rhapsody in Blue" as well as selections that have never been published before. It resulted from the Gershwin Piano Roll Recording Project, spearheaded by Gershwin scholar, Artis Wodehouse. Using original piano rolls created by Gershwin from 1916 through 1926, the project produced the first compact-disc recording of Gershwin performing his own work.

According to Wodehouse, the project would not have been possible without the Disklavier piano's ability to interface with both modern computers and player piano technologies of the past. Computer programs were specifically designed to capture not only the note field on the original Gershwin rolls, but also the dynamics, articulations, and pedaling encoded on the originals. This information was then transferred to 3.5" floppy disks playable on the Disklavier piano, which were used to play the Gershwin performances during the final recording sessions. The compact disc is being released on the Elektra/Nonesuch label.

Using the floppy disks created for the project, Yamaha then produced the new Gershwin addition to the PianoSoft library. "*Gershwin Plays Gershwin*" is a truly historic recording that will allow Disklavier piano owners to listen as Gershwin himself demonstrates why he is a giant of American music.

The Gershwin disk exemplifies the Yamaha commitment to providing PianoSoft recordings that are truly one-of-a-kind, and the result from recording projects that stretch the creative potential of the Disklavier piano to new heights.

Newport Music Festival available on disks for Disklavier™

In early 1994, Yamaha will release new PianoSoft selections resulting from another innovative recording project. In 1992 and 1993, Disklavier pianos recorded the live, on-stage performances of world class artists appearing at Rhode Island's renowned Newport Music Festival, one of the most prestigious festivals in the United States.

The new releases will include two PianoSoft disks from the 1992 Festival (in addition to three titles already released from that year) and three from 1993, the Festival's Silver Anniversary. The recordings feature such artists as Boris Beresovsky, Phillip Bush, Nelson Padgett, Eduardus Halim, Thomas Hrynkiw, Pietro De Maria, and Ann Marie McDermott.

Disklavier Piano owners will now be able to hear the historical Newport Music Festival performances on the Disklavier piano, right in their living room. These unique Disklavier piano recordings, in addition to more than 230 other PianoSoft disks, now available in almost every musical style, demonstrate the Yamaha commitment to provide disks to meet a spectrum of individual tastes.

Next Month: Major Changes at Yamaha...

YAMAHA