Piano Technicians Journal

January 1986

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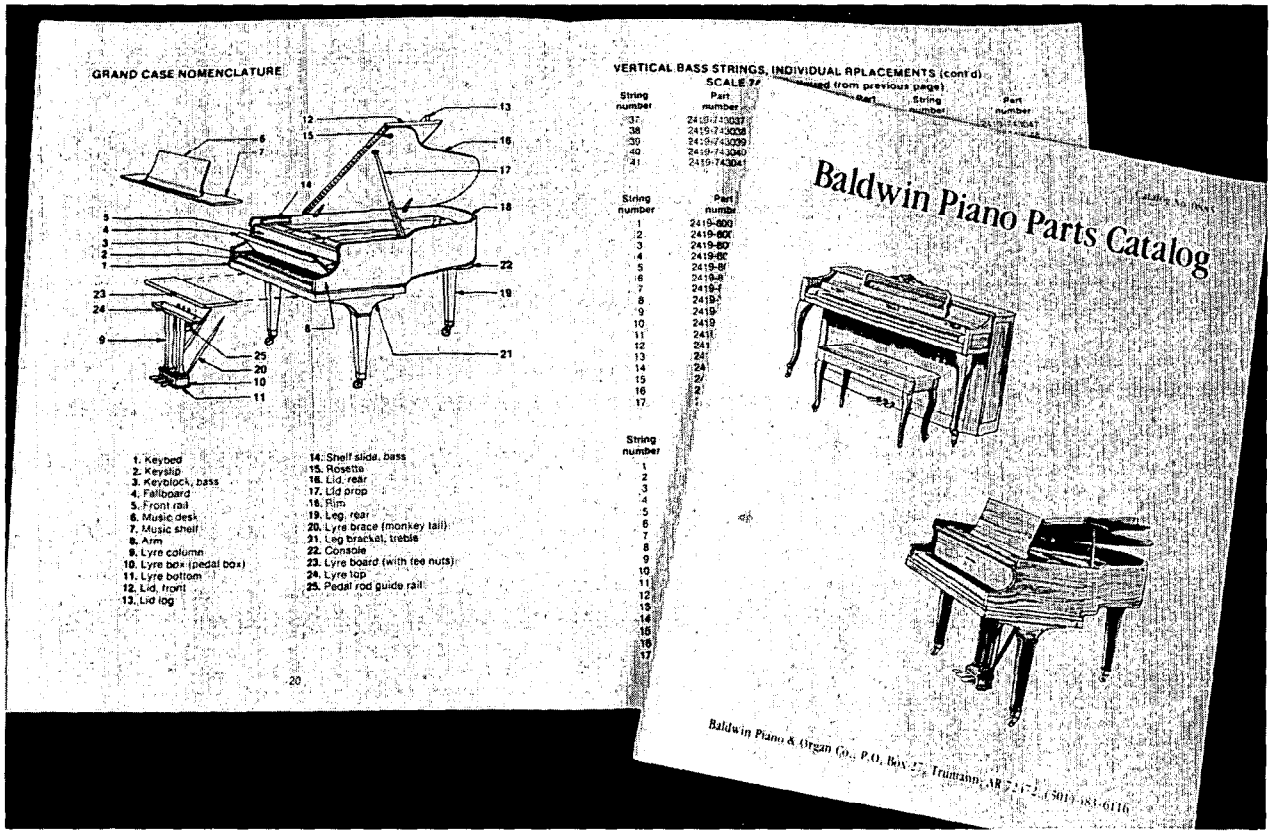

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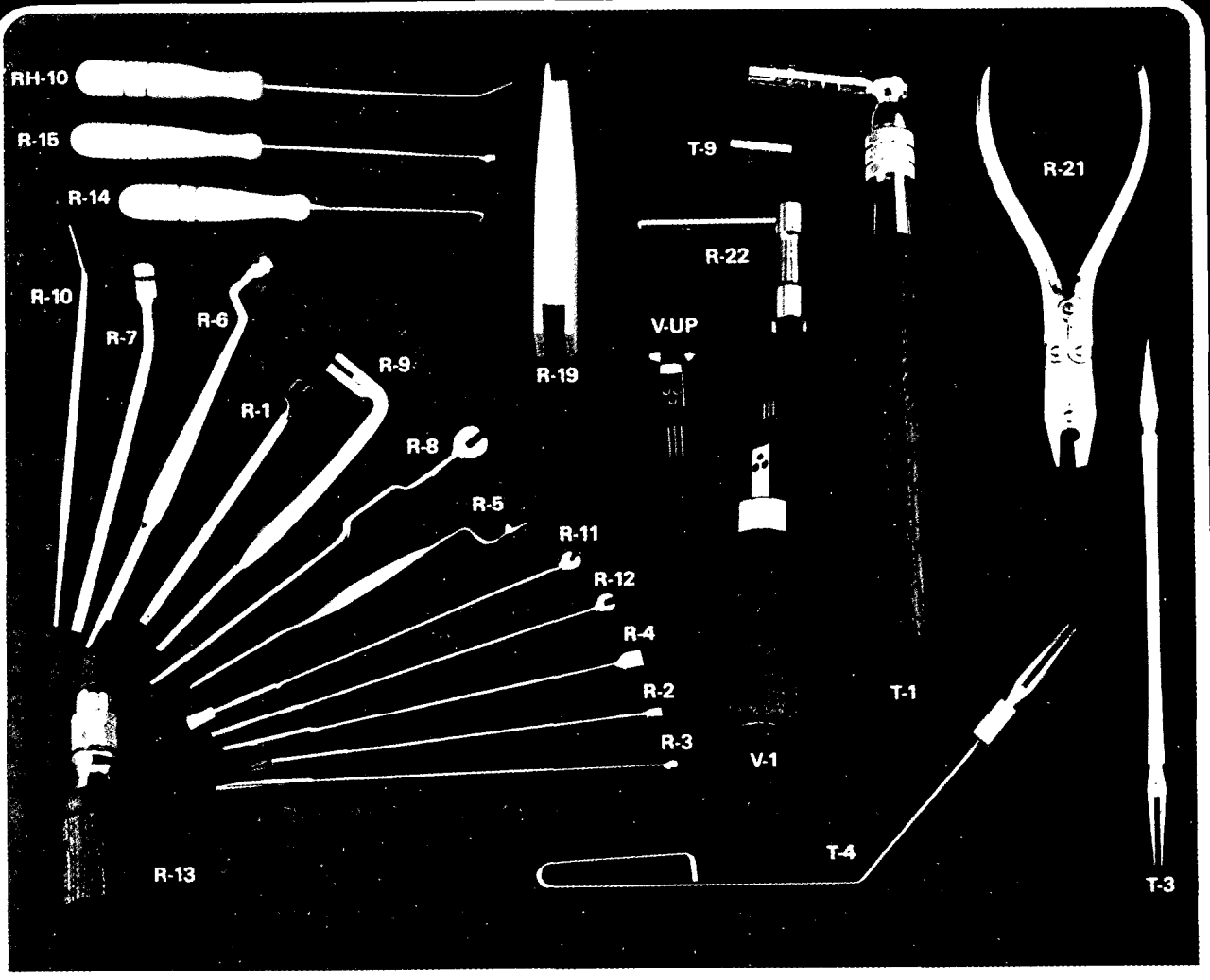

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Piano Technicians Journal **January 1986**

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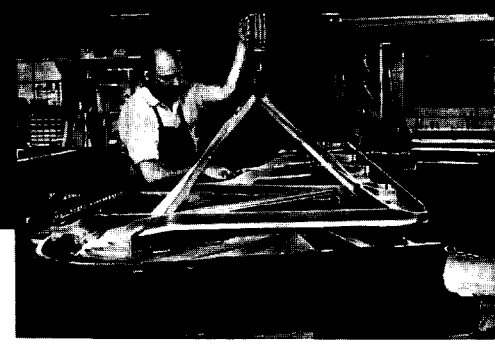

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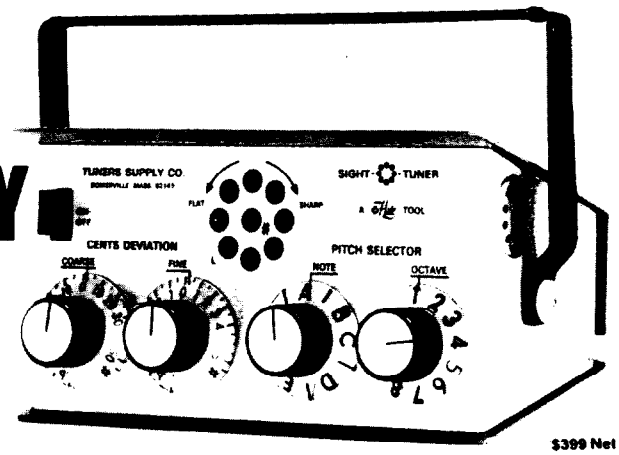

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The President's Perspective

Charles P. Huether
President

An Educational Resolution

When people talk of changing someone's habits, it is usually pointed out that nothing can be changed without a willingness on the part of the person who is being asked to change. Advice along these lines extends from the old adage: "You can bring a horse to water, but you can't make him drink," on through the most profound writings of philosophers, psychologists, religionists, etc.

When we ask: "What can the Piano Technicians Guild do for me?" we are moving into sensitive ground. It can do nothing unless you wish it to.

Of all of the benefits this organization provides, the greatest is that of education. From chapter meetings, weekend seminars on up to the annual institute, we provide opportunities to upgrade skills, advance technological expertise, develop business techniques. There is nowhere else that such a variety of opportunities exists to study such a variety of important subjects. If anyone is lacking in the necessary basic skills to function at whatever level of skill in whatever area of piano service or technology they choose, it is not because the opportunity to learn the necessary background material is lacking. The problem is getting people to partake of this material made available through our organization-sponsored chapter meetings, seminars and institutes.

Are you one of those who thinks that he/she cannot benefit from the material offered? Are you so secure in what you know or think you know that you cannot benefit from exposing yourself to others' experience and knowledge?

Make these resolutions for these next 12 months: resolve to get to every chapter meeting from now on; resolve to go to one seminar; resolve to go to the annual institute in July. When you make the resolution to attend chapter meetings, make another promise: promise yourself that each meeting will be better than the last one because you will be there and because you will be contributing to each program with questions, with answers, with suggestions and even by sharing some special skill by being on the program.

I suspect that many of us are not fully aware of what is available throughout the year by way of supplementary education. The truth is that there is nowhere else in the world where so much is offered. I do not think that I will be contradicted when I say that those who participated in our annual institute last July for the first time, especially those coming from other continents, were more than pleasantly surprised at the variety and depth of programs offered. Don't overlook this most valuable benefit. Don't expect paying annual dues is all that is necessary to make you a better technician, to make your business grow. You need to advance. The opportunities are here, available to you. Use them and progress.

As we said in the opening of this column, one cannot be forced to improve oneself. The opportunity for improvement can be made available, and this we do in PTG. To take advantage of the availability is the responsibility of each one of us. There is no drought in this well of learning. The water is here, not just a glass full, but a pouring freshet of the finest and clearest spring water. Are you thirsty? You probably are thirstier than you realize. It can be contagious. Start in and see how long it takes before you are satisfied. If the people I see at our institute each year are any basis for judgement, the thirst is never satisfied. The more you learn, the more you realize how much there is still to learn. So be active, come and learn, make your chapter an important center of learning.

One last comment. Those who show up regularly at the chapter meetings are usually those who also go to seminars. Those at seminars are usually those who go to the annual institute. And those who go to the annual institute are often repeaters. Once is never enough. We may not be able to make you drink, but we can try to whet your thirst.

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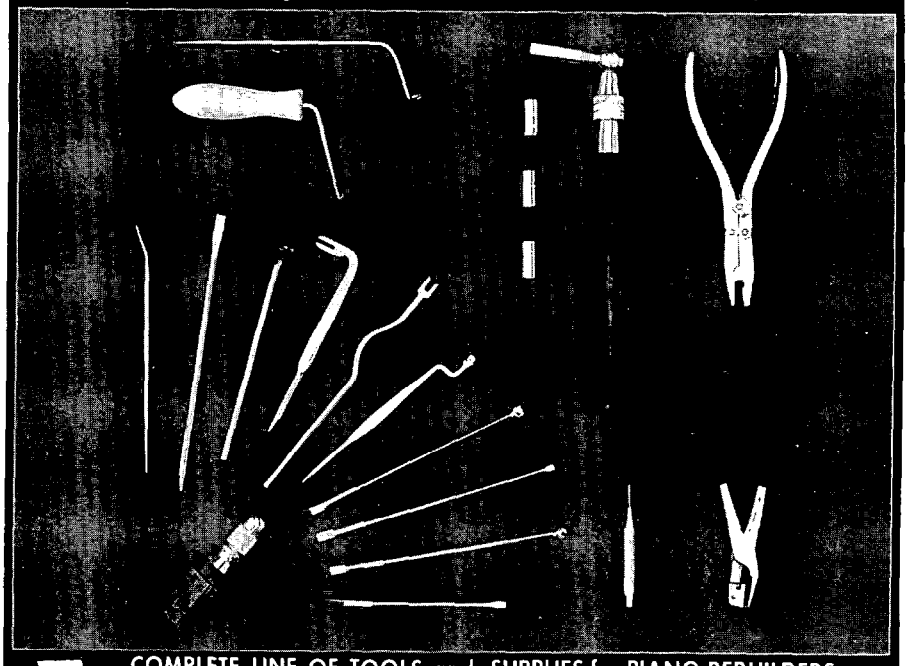

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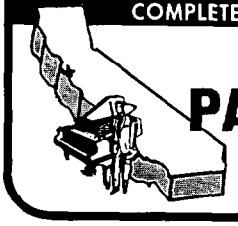

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From The Executive Director

Barbara Parks
Executive Director

Photographs Optional

Have you ever taken a look at an annual report, one of those slick, big-budget printing jobs commissioned by large corporations to either boast about the past year's victories or conceal some bitter truth from their stockholders?

Since public companies are required by law to divulge information about their activities, both bad and good news can usually be found somewhere in those glossy pages. You simply have to look for the truth behind the artistic photographs and the chairman's cheery words.

There isn't really so much difference between a big corporation and one individual with a tool kit and an answering machine — at least not in principle. Both perform one or more functions according to their expertise, receive income, pay expenses and distribute that income to shareholders and employees. An annual report pulls all that information together in one place. It shows stockholders how the company has performed during the past year and gives an indication of what to expect next year. Properly prepared and properly used, it's a good planning and forecasting tool.

I know that this is a busy time, but it also is a time of transition, of closing the books on one year and beginning another. Perhaps you will find an opportunity to shut yourself away for some quiet brainstorming. Gather your ledgers and printouts and prepare your own annual report.

Evaluating your current status is more than just checking the level of your bank account. What investments have you made in your business — not just in terms of equipment but in training and professionalism as well. Your registration fee from last year's convention and institute was not just an expense. You can and should expect it to help you increase your future income as well.

What new interests do you have that can contribute to your business? What investments, whether in time or money, will help you grow professionally? How can you refine your record-keeping and inventory procedures to improve collections and keep a closer rein on expenses? If you have been talking about buying a computer, maybe this is the year to take that step.

There is an old saying, "Time spent organizing is time well spent." By taking some time to consolidate and evaluate, you will make your future course easier to chart. Think of it as preparing an annual report to your chief stockholder — yourself.

The International Scene

Fred Odenheimer
Chairman, International Relations Committee

Planning Your Trip To Europe

It's hard to believe that by the time this article appears in print six months have passed since our last international convention and that the major part of planning for the Las Vegas meeting will have been done. The NAMM Winter Meeting at the Anaheim Convention Center will be just around the corner, followed soon after by the California State Conference in San Diego.

From there to the May-June trip to Europe is just a hop, skip and jump. At the time of this writing, a number of people have indicated that they will come along and from all indications the tour should be a great success.

A good number of factories will be visited in Europe. Piano construction techniques will vary in various factories and you will find conventional ways of building a piano to the use of modern machinery and ideas that will be quite startling. I do not want to give any secrets away, but I just want to point out that the tour will start in Hamburg with a visit to the Steinway factory, followed by Schimmel and Grotrian in Brunswick.

Keep your eyes wide open when you visit these factories. It will be quite a startling experience. Naturally this is just the beginning but it should be enough to whet your appetite.

Probably the foremost meeting of the trade and exhibit of musical instruments is the Frankfurt Music Fair which next year will be held February 15-19. One could say that this fair is the meeting place for the music industry the world over. If you want to be seen, if you have aspirations to export, you had better not ignore this event. On the other hand, if one wanted to take the "pulse" of the industry, specifically the piano industry, in all parts of the world, this would be the place to travel. Here one would probably get some ideas about the immediate future or perhaps even the long-range outlook for the industry.

At best, for most of us anyway, to get to Frankfurt is less than a dream, but if we are lucky enough, we can attend the NAMM Winter Market in Anaheim or the NAMM Expo which will be in Chicago this coming summer.

Economic Affairs

Bob Russell
Chairman, Economic Affairs Committee

Survival

During the last few years our society has been going through some changes. The makeup of our work force has been changing also and, in fact, by the year 2000, 50 percent of all jobs will be in the service field and 50 percent of these people will be working from their homes. Our piano industry and piano dealers have been, and are still going through, a tremendous shakeup. Some factories are closing, while others are building new and expanded facilities. Some of this change is through new business and some is through a desire to modernize, to become more productive and competitive. As some dealers close their doors, others are having their best years.

Piano technicians are no different. During the past few years, some tuners have left the field and gone into other work. They just could not make a living. Other technicians are busier than ever. How can this be? These are more than interesting observations. We could be talking about the *survival* of the entire acoustic piano industry! (I remember when a technician worked on pianos. Now technicians must tell people they work on *acoustic* pianos.) Can we survive? Yes! Some US manufacturers waited too long before modernizing their factories. In Germany and Japan the piano factories were destroyed during the war, and when they rebuilt, of course, they used new technology of the 50s. Whereas some US companies continue to use and work in factories that were built in the late 1800s or early 1900s, using very little modern machinery. *Now* they are trying to play catch-up!

As for the dealers, for years they sat back and waited for the customers to come through the door. Oh, yes, they would run all their Sunday ads in the newspapers. They would have their "factory closeout sale" ... the "spring sale"...the "back-to-school sale"...their "anniversary sale" and others, but those sales were nothing to write home about. They depended upon parents to make their children study piano, which many parents did, because they never had the chance to study piano themselves. Now we have a new generation of parents, a generation who say, "Fine! If you don't want to study, I will!" As a result we have more parents who study piano. So the dealers who sat back and just opened their doors each day have gone out of business. This has taken a tremendous national toll.

We have now arrived at us, the piano technician. Many of us just wait for customers to call us. If we are not at home during the day, *tough!* The customer can call back in the evening. I can remember when I did not work on Saturday or after 4 p.m. If they wanted their piano tuned they would just have to make arrangements. Well, we have had to change our way of thinking and get into the *changing times and working hours of two working parents.* (I just want all of you who have attended my business classes in the past to know that I, Bob Russell, now have an answering machine!) How many of us, if given the choice between attending a business class or a technical class would attend a business class? Not too many! But what good is it to know how to repair a piano if you do not have the business? I could go on and on talking about how to run a business because all of us, manufacturers, dealers and technicians have been running laid-back businesses for some time. And now some of us are wondering why our music world is tumbling down around us. I believe it doesn't have to be! In fact, some progress is beginning to develop to counter our industry's years of apathy.

There are five sides for a musical family. The manufacturers, the dealers, the technicians, the teachers and the students. *We all need each other.* We must work together and understand each others' problems. Music will *survive!* We must do our part to make it happen.

Continued on next page

Survival . . .

Until quite recently, TV advertising was virtually non-existent. The cost was high and the effectiveness of advertising to a large general audience was questionable. With the coming of cable TV, a concept called "narrow casting" was made available. Manufacturers and small companies with special products or services can now advertise on the cable channels that are geared to specific and smaller groups, like MTV. Companies such as Baldwin, Schafer & Sons, Yamaha, Steinway, and others, along with a few dealers are now using TV to advertise. The National Association of Music Merchants is currently developing a national MTV program. So TV has become the most important new trend in the industry for marketing. Manufacturers have started to do the public relations and services that should have been done years ago. Yamaha, and now Baldwin, are giving service bonds, or money, for service maintenance.

I don't have to tell you the benefits for us as more and more pianos are sold. But does that mean that we can go back to just waiting for our telephone to ring? No! *All of us* must work and do our best to make playing the piano fun or, as the bumper sticker says, "Don't miss the magic...make your own music." I am always pleased at the NAMM show when we sell so many "Love thy neighbor...tune thy piano" bumper stickers for the Guild. The more advertising these bumper stickers promote in a positive direction, the better the musical climate becomes.

Visual images have much more impact than written images. A recent article in the *New York Times* underscores this point. A TV reporter, around the time of the "Bittburg incident," did a negative report concerning the president. The report was the first negative one he had ever done concerning the president, and he was a bit concerned about the attitude of the White House towards the article. As he had expected, he received a call from the White House press department the day following the release. However, he was most astounded by their response. Instead of complaining that the story was negative, they said they loved it! Needless to say, the reporter was a bit confused and asked why they loved it. They responded that the president looked very healthy in the film and that eight million people had seen it! But the text of the report was negative, the reporter responded. The press department said, "Only 200,000 people would remember the text, but eight million people saw the image!"

What I am trying to say is that we as piano technicians can do a great deal for the piano industry and ourselves by doing so very little. Such things as a decal or bumper sticker on our car, driving around the city, going from job to job, just displaying music as a fun and worthwhile happening. Many,

Continued on next page

Survival . . .

many people will see the image and get the message.

We can also offer programs to senior citizen groups, schools, libraries, etc., on how the piano works, showing the film "Music of Sound," etc. You will be surprised how much business you will generate. (Of course your telephone number will be on all literature you pass out.)

The Piano Technicians Guild, as a group, could have more impact on the entire field than anyone else, although the manufacturers are also right at the top of the list. We are the chosen group because we have a direct relationship with all five parts of our musical family.

We can help manufacturers by sending them the Guild's Serviceability Improvement form. This form is available from Home Office and it explains, in a nice way, what field problems we are experiencing with their product. We can attend manufacturers' classes and learn the latest way to service their piano. And do not "bad mouth" a piano. I don't know of any piano company that isn't trying to make the best piano possible, at the different price ranges customers want, and still remain in business. Remember, there is no such thing as a cheap piano, just a consumer-oriented piano!

The dealer needs us also, and through our professionalism and presentation we have the ability to make their customer happy and satisfied with their piano. The dealer's new and used pianos can be brought to a higher level of quality by our desire and skills. Our willingness to help them with a last-minute tuning and repair can make them look good to the customer and help their sales. There is one thing I have found working for dealers over the years. Try to understand their position and their viewpoint. Dealers are just trying to keep things going. Some are trying such new concepts as having a piano recital every lunch hour in a downtown office building or a bank. The dealer supplies the piano and local music schools supply the young artist. Once again, people seeing the image and getting the message..."Piano Music!" The entire dealer structure has its problems, so we must support our local piano dealers wholeheartedly.

Music teachers are having their problems also. Many of these are solved through group lessons and/or better quality lessons due to advanced training. Music lessons must be fun and learning quicker than in days gone by. We must compete with our "instant world." As technicians we can help the music teachers. We can give talks to local music teacher groups. I have found them eager and most interested in a class on piano construction, or show them how their piano action works, or "Everything you always wanted to know about pianos." We are not only getting contacts ourselves and spreading the word, but we are increasing their knowledge and they will be better instructors.

Don't you get tired of hearing from customers, "My piano teacher says the piano is still in tune." Teachers need to be educated that minimum maintenance for a piano is tuning once a year. The Piano Technicians Foundation's Steve Jellen Memorial Fund for Research and Scholarship is going to give a $500 yearly scholarship to a piano teacher who wants to continue piano lessons or piano pedagogy. This will be started this spring. The selection will be done by the National Music Teachers Association. Not only will the Guild, you and I, receive positive publicity through their national magazine, but we will be part of making better-educated teachers, which is a noble undertaking for any society.

We are also beginning to help piano students around the country through scholarships. The California State Conference has been giving scholarships to worthy students for quite some time. The Detroit chapter has been giving scholarships regularly and other chapters also are finding this to be good advertising. Chapters are sponsoring booths and giving classes at music teachers' state and national conventions throughout the country. This is most positive for the Guild. Your national Guild staffs a booth at the two NAMM shows each year. Many communications and public relations are carried out at these shows.

The Piano Technicians Guild is truly international. We are recognized by manufacturers and dealers internationally as a viable organization (probably the strongest organization in the music industry). We help dealers find technicians; we help technicians find dealers. We provide advice to manufacturers pertaining to technicians. Service is our business. We try to help people. Perhaps we must all realize that every day...we help people!

Last of all, we must directly help ourselves. The fastest and surest way to help is through education. I continually hear technicians complain that the dealers do not use Guild members, or that "someone" should do something to make dealers use Guild members. I say, "Bull!" If you are really the best technician in town, you might not do the store tunings, but you will get the trouble-shooting and quality work. Word will spread from person to person, dealer to dealer, that you are doing quality work and your business will increase. And don't try to tell me that customers don't know quality work. It is up to you to show them the difference!

Every one of us is a fine public relations person for the Guild. *You* have the ability to spread the Piano Technicians Guild to the dealers; *you* can change public opinions by advertising the Guild, keeping up with your skills, offering help and education to music teachers, keeping customers happy, attending conventions and seminars and being a part of the entire music world! *You really are the difference!*

The above address was delivered by Economic Affairs Committee Chairman Bob Russell at a recent seminar.

THE
TECHNICAL
FORUM

Damper Action Alignment, Tech Tips and Reader Comments

Jack Krefting
Technical Editor

Our esteemed illustrator, Jim Campbell, who has done most of the art work for the Forum and other technical articles for the past several years, has broken his right arm in an unfortunate accident. Jim was tuning a small pipe organ which he had just finished building when the bench on which he was standing collapsed, and he hit the floor right hand first, shattering his wrist. The prognosis is that the arm will be in a cast for five or six weeks, after which Jim will have to undergo the rigors of surgery or another cast, depending on how the wound heals.

Now Jim is a multi-talented person who can do just about anything except draw with his left hand, so for the next month or so I will be doing the drawings myself. We will all be eagerly awaiting his recovery, obviously.

Damper Action Alignment

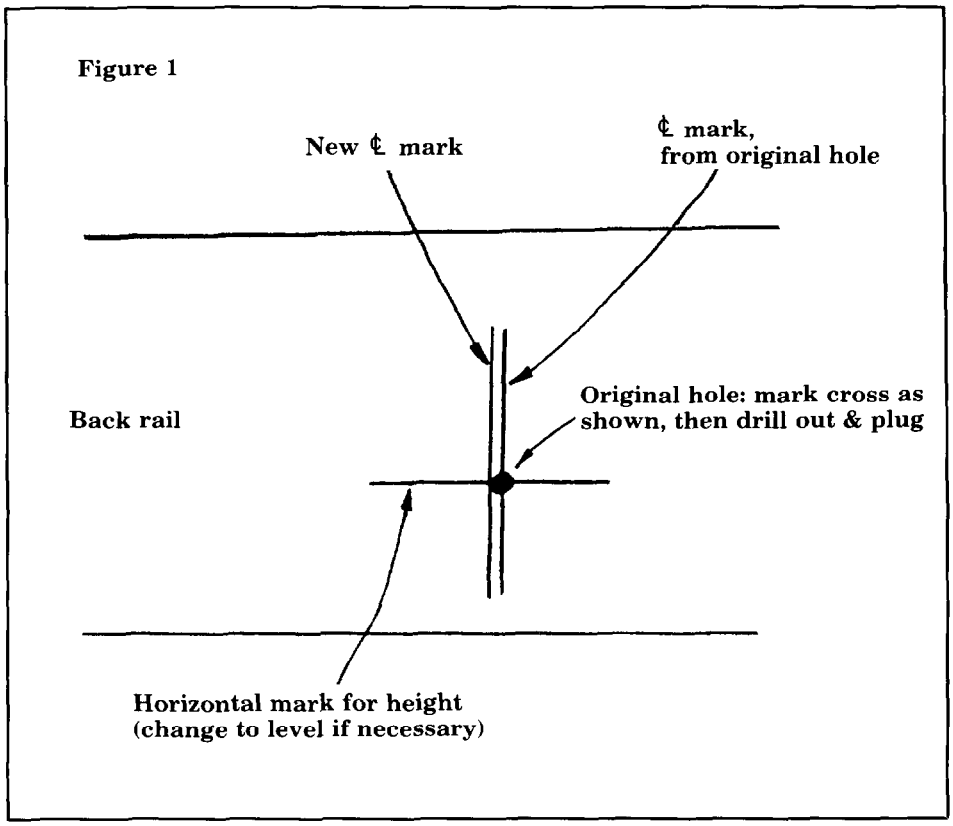
Q: *I have been asked to finish putting together a grand which had been torn down and partially rebuilt by another technician, now dead, and there are some problems. It has a new block and has been restrung, and most of the action parts are new also. The damper action is completely dismantled, and that is the worst of the problem. How do I line everything up?*

A: We will assume that the work already done was satisfactory, and that "finish putting together" includes any necessary rebuilding work. If that assumption is a fair one, it would be an excellent idea to rebuild or repair the damper action now also. Even if it is in good condition, we should check all action centers, lever weights, helper springs and sostenuto tab springs, if for no other reason than that it is easy now and difficult later.

Damper action centers should be very free, registering no measurable resistance on a gram scale; any error here should be on the free side (as opposed to the firm side) because a damper center that is a bit too free will cause no problems so long as the centerpin is tight in the birdseye.

Check lever weights for looseness by tapping each lever against the side of your forefinger, or other semi-rigid surface, listening for clicks. Offenders need to be tightened, either by staking the lead or sizing the hole. To stake the lead, lay the lever sideways on a bench vise so that its loose lead is resting on the tip of a drift punch that has been clamped in the vise. Then, with a second drift punch or a tuning pin punch (good for larger diameter leads) and a hammer, tap the upper surface of the lead so that it will expand outward and become tight in the wood once more. Don't hit it hard, now, because the lever will surely split if you do; temper enthusiasm with finesse, secure in the knowledge that you can always hit it again if it's still loose.

Alternatively, one can slip out the loose weight, size its hole with a 50/50 mix of glue and water, slip the weight quickly back in and wait for the wood to expand and tighten the lead weight. The third option, detestable as it may be from the standpoint of the purist but undeniably effective, is to simply epoxy the weights back in place.



Lining up the damper action, once the levers are mounted on the rail and traveled and spaced, is largely a matter of working downward from the strike point. Since the piano is already strung, competently or otherwise, the strike point has also already been established; in the lower half of the scale at least, that also means that the side-to-side position of the hammers has been determined. When setting up the action in any modern grand, the shanks will be perpendicular to the hammer flange rail and the hammers will line up with their unisons, while at the same time the hammer tails will be directly above their respective wippen flange screws. This ensures that the jacks will address the knuckles head on, without one corner of the jack tip being closer to the knuckle core than the other.

In order to achieve that, it will obviously be necessary to shim the entire keyframe, with its stop block, so that the capstans are directly underneath their wippens, which are in turn directly beneath their respective knuckles, when the hammers are centered on their unisons. This alignment is necessary even if that requires a keyblock change, once the plate has been installed. If the plate has been installed exactly where it was originally, the keyblocks will fit without alteration; but the keyboard has to follow the plate regardless of cabinet problems, and if the plate moves, so must everything else. Thin one keyblock and thicken the other, as required to fill the gaps.

Once the side-to-side position of the keyframe has been established, we can line up the damper action — by trial and error, if necessary — so that each keytail picks up its respective damper lever and no other, and does so in the shift position as well. If the original keytail felt (damper lift felt) is still on the keys, it may be possible to observe damper lever marks which indicate the original placement of the damper action; that information; together with the knowledge of how far and which way the action was moved to line up with the strings, makes it possible to guess the proper placement of the damper action with surprising accuracy.

The easiest way to move the damper action, assuming it won't have to move very far and that it is the traditional type with bearing blocks and punchings on pivot pins, is to alter the thickness of the punchings. If the action must be moved toward the treble, for example, remove the treble pivot punching (usually a balance rail cloth punching) and replace it with something thinner, such as a hitchpin punching or something similar made from bushing cloth. Then add a balance rail cardboard punching to the bass end of the lever board, and the effect will have been to move the damper action to the right without having changed any bearing block locations.

If that won't work for whatever reason, it may become necessary to plug and redrill holes in the back rail. First, decide how far it should move and then, with a small square such as a hammer square, scribe a straight vertical line through the center of each damper action mounting screw hole. Now measure the distance the holes should move (see *Figure 1*) and scribe a second line, which will of course be the centerline of the new screw hole. Plug the existing hole with hardwood, mark the center of the new hole with an awl or an automatic centerpunch, and redrill.

But what if the bass bearing block is touching the bass side of the rim and the action must be moved to the left? Moving the mounting hole would obviously be pointless unless the bearing block itself is planed down so it is thinner, which is a lot of trouble. It is easier to pull the pin and cut or rasp wood from the bass end of the lever board, and then replace the pin and add a cardboard punching to the treble end.

This sounds like a lot of trouble, and of course that's just what it is, but since the guide rails must be moved anyway to keep the wires from buzzing on the strings, it is probably easier for most technicians to move the damper action by the same amount, thereby minimizing the need to bend wires. The real problem occurred when the plate was relocated, so unless there is a compelling reason to put the plate anywhere but exactly where it was, don't.

Tech Tips

Dennis Berryhill of Duluth, MN, suggests using short lengths of PVC plastic pipe as spring clamps for gluing on keytops, holding down grand keyframes during regulation, or any job which requires a low-pressure, quick-release clamp. Select the proper size pipe and cut off a suitable length, somewhere between 1/2 and three inches, and then make a linear saw cut through one wall of the pipe as shown in *Figure 2*. Force the "jaws" open and around the object to be clamped, and the pipe section will maintain a steady clamping pressure.

Our next tip involves a special two-ply needle which was presumably designed for stitching leather, but also works well for bolstering knuckles. William M. Turek of Geneva, NE, found the item at Tandy Leather Stores and noted that the gripping teeth (See *Figure 3*) will hold a pointed strip of bushing cloth very well without any glue or wrapping. Bob Erlandson of Omaha, who sent in a sample, says it works better than anything he has tried for this purpose.

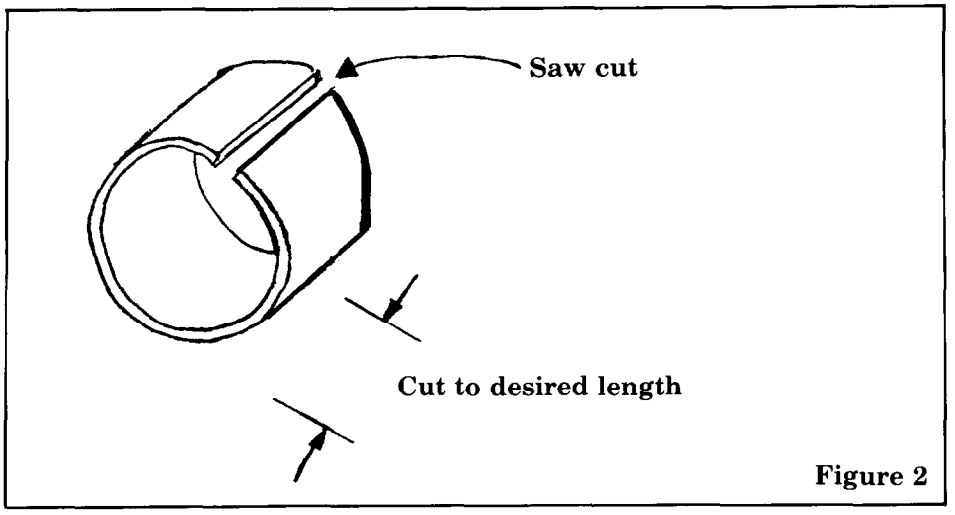


Figure 2

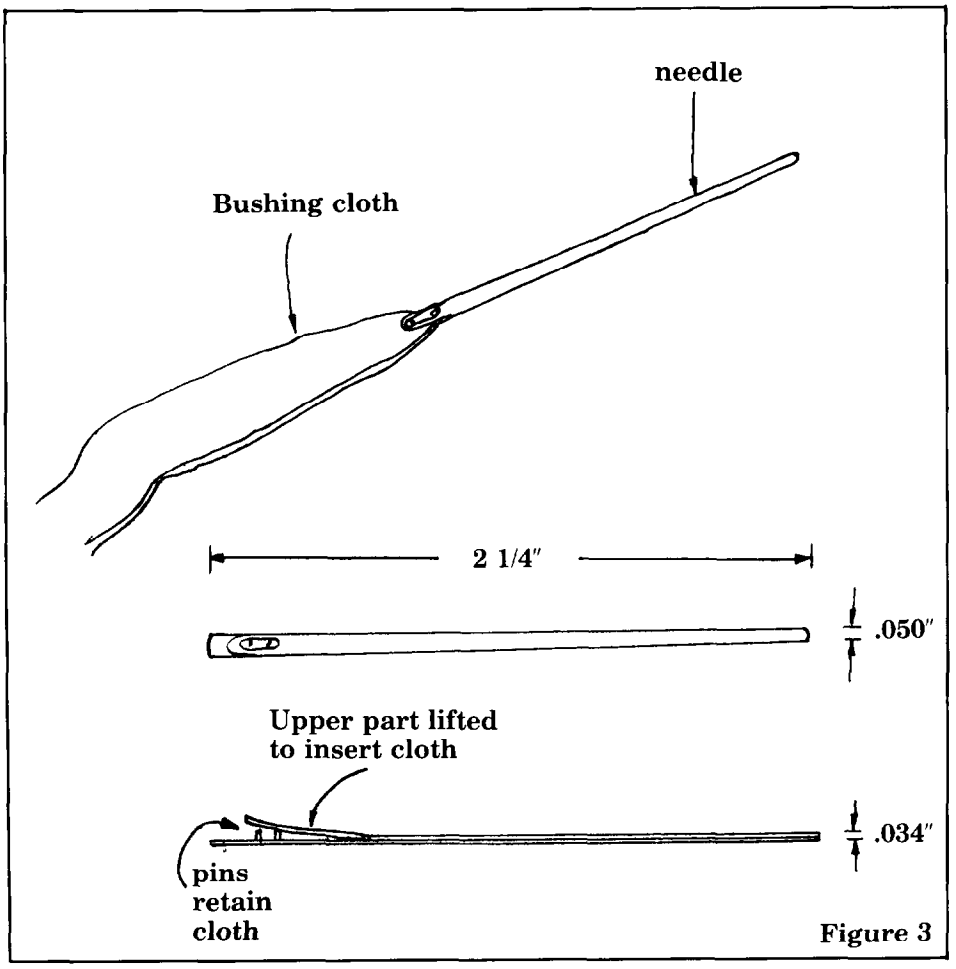


Figure 3

Reader Comment

Thanks to Christopher Robinson for his contribution to the Journal. *His last "Eclectic's Notebook" should get all piano people thinking before it's too late for the American piano manufacturer.*

I think what's needed is more cooperation within the American industry. When is the last time piano company experts met to exchange ideas like they used to in the early 1900s, which must have been a very competitive era for the American piano industry. We have got to realize that united we stand against foreign competition and divided we will fall.

Kent Gallaway
Ripon, WI

Please send all technical articles, comments, tips and questions to me at this address:

Jack Krefting
PO Box 16066
Ludlow, KY 41016

SHOP TALK

The Art Of 'Unsalesmanship'

Susan Graham
San Francisco Chapter

"How do you sell people work? This piano was a mess and I spent hours trying to educate the customer but they just didn't seem interested."

This is a question/complaint I often hear, usually from relatively new technicians in a state of extreme frustration. The hope seems to be that some magical combination of words will hypnotize a customer into agreeing to whatever we prescribe for their pianos. If an initial sales pitch fails, the tendency is to apply more and more words to the situation until the customer either capitulates under the barrage or rejects not only the notion of work but the technician as well.

There is some success with this method of high-pressure (and manipulative) "selling," but I am not an advocate of it. From what I see, and what I feel when I am subjected to it, it creates an adversarial situation which is uncomfortable as well as unnecessary. People may agree to work under such circumstances but the feeling of having been pressured or possibly duped remains. (The experts at this type of selling also seem to be the experts on handling small-claims court action...)

So, to answer the original question "How do you sell work?" my answer is "I don't." In spite of this, I have a steady supply of rebuilding and repair work and a history of satisfied customers; I also manage to handle not getting a particular job without too much angst. This comes from facing the fact that a lot of my customers will never want anything other than tuning, regardless of how unsatisfactory *I* regard the condition of their pianos. I'm happy to do the best I can for them. I've also developed a pretty successful method for finding the ones who do want more, though. It's a simple four-point system and I'll present it here.

"To answer the original question 'How do you sell work?' my answer is 'I don't.' In spite of this, I have a steady supply of rebuilding and repair work and a history of satisfied customers; I also manage to handle not getting a particular job without too much angst."

First, *find out if anything is bothering the customer.* A piano may present two different sets of problems: the ones that bother the customer, and the ones that concern you as the technician. These sets may coincide, partially or entirely, but it is only sensible (as well as courteous) to let the customer tell you theirs first. *Ask* them. Presumably you are in the home to tune and this gives you the perfect opportunity to inquire, "Have you had sticking keys or any other problems with your piano?"

This introduces two important ideas: one, that pianos do sometimes need service other than just tuning, and two, that they are encouraged to report things and talk to you about their instrument. Listen to the reply carefully, not only to obtain information about the piano but also to learn what kind of person,

how advanced a musician, etc., you are dealing with. You want this information to be able to tailor the service you give them to what is most appropriate for their needs.

Second, *determine the cause for the complaint.* Even something which experience tells you will probably be simple to fix may fool you, so try to diagnose it immediately even if you prefer to do the actual repair later in the call. Then evaluate the piano to be sure it is tuneworthy. If it is grossly flat or has serious structural problems making it unstable or just plain untunable, you must inform the customer immediately, without obligating them to pay you for any more of your time. If not, go ahead and tune it. After all, "tuning" is the stated problem they have asked you to fix: fix it before you approach them with a list of other necessary work. Tuning will give you the opportunity to evaluate the piano for tone and resonance, string rendering, pin tightness, structural condition and the feel of the action. The variety of key strokes employed in a normal tuning pattern (several slow repetitions and a final hard test blow) will tell even non-pianists like me a lot about sluggishness, regulation and wear.

Third: *explain the cause of their complaint and present your findings.* Even if it's a little thing which you can fix without further charge, let them know what it was. If the repair will require a small extra fee, be sure to warn them before you do it. Approaching them with the information you have gained about more serious problems, either present or potential, must be skillfully done. If it is a non-critical condition, due to the normal wear on a piano of that age, *find out if they are interested in improving the piano* before you launch into a detailed explanation and overburden them with a lot of information they can't handle. Once again, just ask. "Are you interested in improving your piano? Does it bother you that the response is uneven/notes click/tone is dull (whatever)?" If the answer is no, accept it gracefully — our customers have responsibilities other than just their pianos and will appreciate some understanding on that point. Very quickly and simply tell them that, for the future, a certain procedure for a certain sum would yield certain results, and let it go. Present it as information for their consideration, something which only you can tell them and you feel obligated just to let them know — no pressure, no "sales," just information. If possible, tell them approximately how long it will be before the need for more work becomes critical.

> "If their eyes begin to glaze or wander, stop and make a light remark to acknowledge that it is a major decision and a lot of new information...The object is to be clear and straight forward and answer any questions, but be succinct."

If the condition is more serious (usually problems of a structural nature but also things such as plastic elbows which you know will be trouble in the near future) you may want to discuss them with the customer before you tune to emphasize that the problem is serious and affects the value of the instrument as well as whether or not they will get the benefit of your tuning. Do a thorough evaluation and be very clear in your own mind what the problem is and what needs to be done *before* you talk to the owner. You may be able to offer them several repair options but you must decide what they are so you can give them simple, clear-cut choices to make. If it is applicable, also tell them what the repairs *won't* do — try to be sure that everyone has a realistic expectation of what the piano can or will offer. Don't burden your customers with long drawn-out explanations, and don't try to decide what to do by figuring out how much they can afford. If their eyes begin to glaze or wander, stop and make a light remark to acknowledge that it is a major decision and a lot of new information, and that you're aware of that. As quickly and as simply as you can, tell them what you have found, how serious and how rapidly it will deteriorate, what it will cost to repair and whether delaying the job will increase the cost. The object is to be clear and straightforward and answer any questions, but be succinct. Don't waste their time, but don't let them waste yours either.

Fourth: *determine a workable plan and schedule for repair.* If major repairs are needed or the piano needs to be entirely rebuilt and there is interest on the part of the customer, you may want to discuss price and scheduling in general terms and then re-examine the piano in detail to take good notes and return home to let the enthusiasm over a potential big job simmer down a little before you trap yourself in a price. I see no problem with explaining that you need to check on price and availability of parts, examine your shop schedule, or simply think it over. If the job is less extensive, you may be comfortable writing up an estimate immediately, while still in the home.

In either case, draw up a detailed estimate/contract which they can sign to authorize the work. My contracts include an indication of how much notice I need to schedule the work, and a time limit after which the price may vary. The customer is free to hold onto the contract as long as they need and then notify me when they are ready. This gives them something concrete to think about, discuss and evaluate against the cost of replacing the instrument. It's important to be patient and let your customers know that you don't mind waiting for a convenient time for them to do the work (this also implies that you are busy, which is beneficial). I've also learned never to assume that someone is a deadbeat — sometimes these rebuilding con-

tracts materialize after five years when a call comes out of the blue saying that they're ready for "that work." The intervening years also give you an opportunity to perform regular tunings and minor service, and to establish an excellent rapport with the customer. Remember that you're in the business for long- as well as short-term benefits, and be patient. (Be patient with your mediocre-little-spinet customers, too — sometimes they inherit nice old grands...)

A final point: what do you do when the customer reports a problem but you either don't perceive it or can't fix it? First of all, accept that if the customer perceives it, it is real enough to need to be dealt with. All piano problems present themselves to our brains via our senses: we hear or feel or see them. The data reaching our customers via their senses is just as real to them and we are in business to honor that reality (the philosopher Berkeley used much the same logic to argue that nothing is real, which is at times a comforting if somewhat perverse thought). Even if you can't determine the cause of the problem, don't insult and alienate your customers by telling them that they're wrong, crazy or hearing things. If you just don't hear the problem, admit it. It may be within the range of normal piano behavior and therefore not as noticeable to you as it is to them since you are more accustomed to it. If you do perceive the problem and can't find or fix it, admit that. In either case, if you avoid becoming an adversary, your chances of finding a solution (via another technician or a return call) are far better. If the problem is inherent in the piano, explain that.

You must be well-informed about piano design and function, and try to do this without an air of either moral outrage or personal culpability. Often, it's just a matter of dollars and cents: most people remember that you get what you pay for — if not, gently remind them. If there is a problem which you feel should be handled under manufacturer's warranty, tell them that you need to check with the maker *before* you promise that it will be covered. Avoid making promises which are not yours to keep.

Don't let a fear of being blamed for the shortcomings of an instrument drag you into lengthy explanations. Be able to give clear, concise, non-defensive explanations of the limitations of a work of art, built by humans of natural materials and expected to perform as a precise machine. Put yourself in your customer's place: they have an expensive and mysterious object which they want to enjoy and they depend on you to help them do so. Offer your services as something they can utilize at their convenience.

Find out what's bothering them; determine the cause; explain the cause and present further findings of your own; determine a plan and a price for solving the problem or explain the real limits of the instrument. It's a simple, low-pressure kind of selling and I think it's all you need to do.

TOOLS OF THE

TRADE

The Right Moves

Richard Hassig, RTT
Tri-City, IL, Chapter

In my early days of tuning, (back when I knew practically everything there was to know about piano technology) I used to move my tuning hammer around from pin to pin using my right hand to hold the lever and my left hand to guide the tool to its destination. I really do not know if I was taught that way or it just was the way I did it. Once I read that the job could be done much more efficiently with one hand, leaving the left hand on the keys. "How clumsy," I thought. "It would take me so long to look around with my right hand while still holding the hammer." *Wrong!*

It occurs to me that there might be other people with that opinion so I shall try to explain how to use one hand. It might take two tongues to tell it but here goes.

You have your tuning hammer hand on the hammer, you have just set the tuning pin and are ready to move to the next pin. Drop down to the head of the hammer and place the palm of the hand over the head. The shortest head practical is best to have on the hammer but that is probably best anyway. I shall make no comment about the size of the head on your shoulders, except to say that you will probably prefer to keep the original equipment. With your palm placed just so, you should be able to observe the layout of the tuning pins with your thumb and index finger, and all fingers if necessary, until the relationship of tuning pins with thumb and index becomes familiar.

"With your palm placed just so, you should be able to observe the layout of the tuning pins with your thumb and index finger, and all fingers if necessary, until the relationship of tuning pins with thumb and index becomes familiar."

You know, of course, that in the treble and center areas of the scale, the pins are usually arranged in threes, one triplet for each note. Furthermore, they are arranged, usually, in a staggered manner. That is one slightly up, the next slightly down, next up, and so forth. So, the next group up or down makes a semitone. The next group in the same plane makes a whole tone. One up, or down, and three over makes a fifth. Six over in the same plane makes an octave. Your thumb or index finger can locate up, down or middle in the particular triplet. You should very soon be able to wrap the last three fingers around the hammer head while the thumb and index fingers act as the guides. The bass can get a little more troublesome, but not bad, really. Possibly the worst bass I have encountered is that in which the strings are in pairs but the tuning pins are in triplets, but even that is conquerable. Neither do I like the bass in which the right hand string is the top tuning pin. Not because it is difficult to handle, I just think it is dumb.

AT

LARGE

The Geometry and Mechanics Of Downbearing Made Easy

Tom Lowell
Rogue Valley, OR, Chapter

In this article I will answer comments and correspondence I received pertaining to the downbearing analysis portion of my July 1985 *Journal* article "Plate Suspension Systems and Downbearing Analysis."

Responses included the following: "You described your tools, but you didn't explain how to interpret or use the data they give." "Why do we need separate measurements for front and rear bearing? Isn't a net bearing measurement sufficient?" "I don't understand the relationship between string-bridge angles and the amount of string deflection caused by the bridge."

Before answering the above questions, I will review the basics of downbearing, briefly identify four methods by which uniformly accurate measurements can be taken relating to downbearing, and then describe in detail, using examples, each of these four methods. Please note that the engineering upon which much of this material was derived is neither new nor entirely original to the author. This will become evident upon reading the excerpt from an article by Don Galt (*Piano Technicians Journal,* May 1970, page eight) included further on in this text.

What Is Downbearing?

1. It is a force, which can be calculated in pounds, approximately perpendicular to the string plane.

2. It is a condition caused by the interruption and deflection of the string plane by the soundboard bridges. This definition was given by Chris Robinson in his class at the national convention in Kansas City. The measurement of this deflection may be called "distance bearing," which is the force of the strings upon the bridge as described above. ("Downbearing on Piano Strings," W.V. McFerrin, *Piano Technicians Journal,* May 1961, page 24).

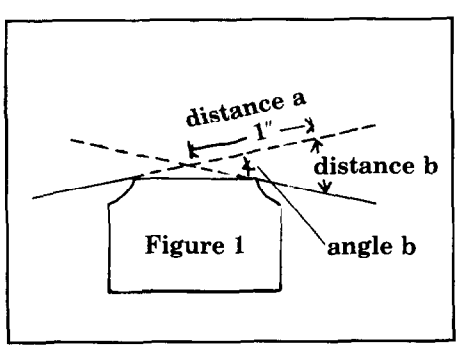


Figure 1

What are the methods by which standardized and accurate measurements can be taken relating to downbearing?

1. Measure the sine or tangent of the angle created by the front and rear string planes (for piano string angles we can substitute tangent for sine). This is "net" bearing.

2. Measure the pounds of downward or upward force the string produces on the bridge.

3. Measure the tangents of the angles made by the front string to bridge string segments, and the bridge string to rear string segments. These two "components" can be added to get "net" bearing, the same as would be obtained using method 1 above.

4. Measure the highest distance of deflection as measured from the undeflected string plane. This amount is known as "distance" bearing.

Detailed Descriptions Of The Four Methods

1. Measure the tangent of the angle created by the front and rear string planes. Please examine *Fig-*

Figure 2

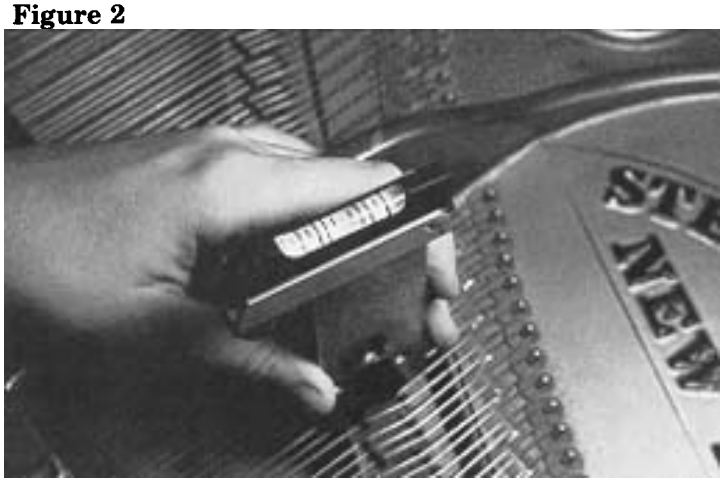
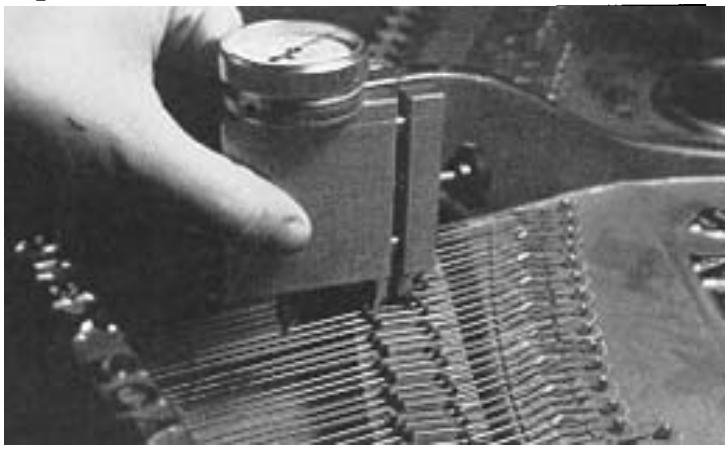


Figure 3



ure 1. The broken lines represent the extension of the string line. When distance *a* is one inch, distance *b* is the tangent of angle b. Zero a component bearing gauge *(Figure 2)* on the speaking length, then place it on the rear length. Count the divisions the bubble crosses, multiply by three, and one has the tangent of that string angle. See *Figure 3*. Similarly accurate results can be obtained by using a Baldwin-style bubble gauge which their technicians use in a similar fashion.

2. Measure the pounds of downward or upward force the string produces upon the bridge. As this is difficult to measure directly in pianos, we will calculate it instead, using the following formula: downbearing force equals (string tension)(tangent of string angle). Taylor's formula in the form useful to piano technicians is

$$\frac{f^2 l^2 w}{675256}$$

See *Figure 4*. *Figure 5* shows a model with which the downbearing force can be measured. The model simulates note 49 on a Steinway "M," #269177. The speaking length is tuned to 440 hz. Measurement of the net bearing tangent of the two outer strings showed .018. The bridge is cut out so that the center string remains undeflected. The scale under the bridge shows a downbearing force of 5.5 pounds being exerted on the bridge. This is the amount we predicted, based upon our calculations as shown in *Figure 4*.

3. Measure the tangents of the angles made by the front string to bridge string segments, and the bridge string to rear string seg-

$$\text{Tension} = \frac{f^2 l^2 W}{675256}$$

where f = frequency
l = speaking length
w = wire weight in grains/inch

Figure 4

Note 49, Steinway M #269117 = 17
wire = 2.38 grains/inch
l = 15.375
f = 440 hz

$$\text{Tension} = \frac{(440)^2(15.375)^2(2.38)}{675256}$$

Tension = 161.3 pounds

Downbearing force = (tension) x (tangent of string angle)
Downbearing force = (161.3) x (.018)
Downbearing force = 2.9 pounds
Downbearing force for *two* strings = 2.9 pounds x 2 = 5.8 pounds.

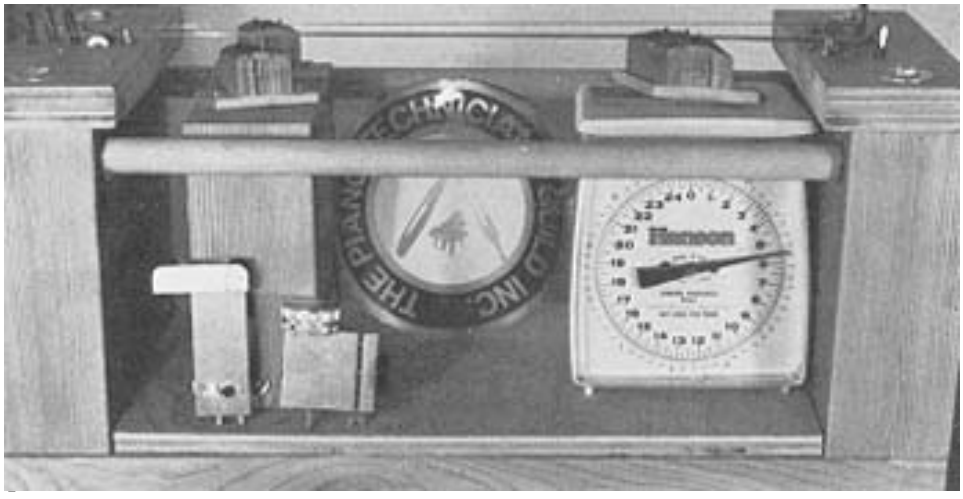


Figure 5

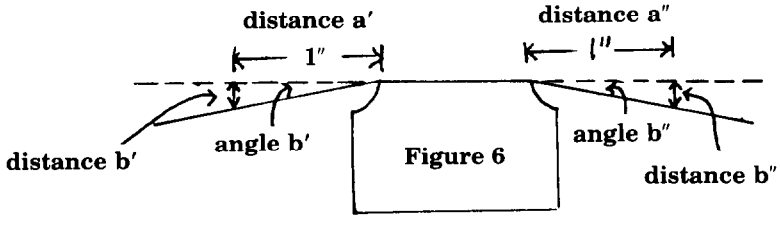
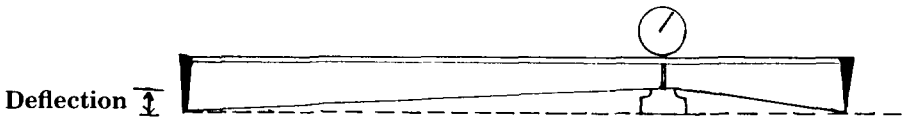


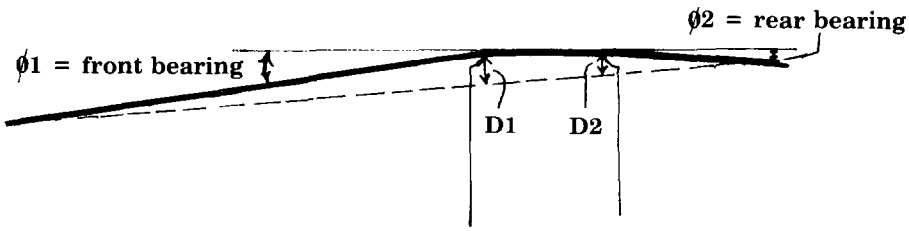
Figure 6



Dial gauge would read amount of deflection from undeflected string line, in this case, 3/16″

String line
Undeflected string line

Figure 7
(Not to scale)



Deflected string line
Undeflected string line
Bridge plane

D1 String deflection at front edge of bridge (distance bearing)

D2 String deflection at rear edge of bridge (distance bearing)

Figure 8
(Not to scale)

Figure 9 **Steinway M #269177** **String #43**

String deflections D1 followed by D2 in inches
D1 is the string deflection at the front (speaking) edge of the bridge.

L1 = 21.25″ W = 0.625″ L2 = 5.375″

ϕ1 = front bearing ϕ2 = rear bearing

ϕ1=	ϕ2= 0.0	0.003	0.006	0.009	0.012	0.015	0.018	0.021	0.024	0.027	0.030	0.033
0.036	0.168	0.181	0.194	0.206	0.219	0.231	0.244	0.256	0.269	0.282	0.294	0.307
	0.151	0.164	0.177	0.190	0.203	0.216	0.229	0.242	0.254	0.267	0.280	0.293
0.033	0.154	0.167	0.180	0.192	0.205	0.217	0.230	0.242	0.255	0.268	0.280	0.293
	0.138	0.151	0.164	0.177	0.190	0.203	0.216	0.229	0.242	0.255	0.268	0.281
0.030	0.140	0.153	0.166	0.178	0.191	0.203	0.216	0.228	0.241	0.254	0.266	0.279
	0.126	0.139	0.152	0.165	0.178	0.190	0.203	0.216	0.229	0.242	0.255	0.268
0.027	0.126	0.139	0.151	0.164	0.177	0.189	0.202	0.214	0.227	0.240	0.252	0.265
	0.113	0.126	0.139	0.152	0.165	0.178	0.191	0.204	0.217	0.230	0.243	0.256
0.024	0.112	0.125	0.137	0.150	0.163	0.175	0.188	0.200	0.213	0.225	0.238	0.251
	0.101	0.114	0.126	0.139	0.152	0.165	0.178	0.191	0.204	0.217	0.230	0.243
0.021	0.098	0.111	0.123	0.136	0.149	0.161	0.174	0.186	0.199	0.211	0.224	0.237
	0.088	0.101	0.114	0.127	0.140	0.153	0.166	0.179	0.192	0.205	0.217	0.230
0.018	0.084	0.097	0.109	0.122	0.135	0.147	0.160	0.172	0.185	0.197	0.210	0.223
	0.075	0.088	0.101	0.114	0.127	0.140	0.153	0.166	0.179	0.192	0.205	0.218
0.015	0.070	0.083	0.095	0.108	0.120	0.133	0.146	0.158	0.171	0.183	0.196	0.209
	0.063	0.076	0.089	0.102	0.115	0.128	0.141	0.153	0.166	0.179	0.192	0.205
0.012	0.056	0.069	0.081	0.094	0.106	0.119	0.132	0.144	0.157	0.169	0.182	0.194
	0.050	0.063	0.076	0.089	0.102	0.115	0.126	0.141	0.154	0.167	0.180	0.193
0.009	0.042	0.055	0.067	0.080	0.092	0.105	0.118	0.130	0.143	0.155	0.168	0.180
	0.038	0.051	0.064	0.077	0.090	0.102	0.115	0.128	0.141	0.154	0.167	0.180
0.006	0.028	0.041	0.053	0.066	0.078	0.091	0.104	0.116	0.129	0.141	0.154	0.166

ments. These two components can be added to get net bearing, the same as would be obtained using method 1 above. See *Figure 6.* Instead of extending the string planes as in *Figure 1,* in component bearing the bridge plane is extended. Otherwise the principle is the same. When distance a′ or a″ is one inch, distance b′ or b″ is the tangent of angle b′ or b″.

Adjust the movable feet on a component bearing gauge to just fit between the bridge pins of the string to be measured. Zero the gauge on the bridge string segment, then place the gauge on the speaking length. Count the divisions the bubble crosses, multiply by three and one has the front bearing (tangent). Repeat the procedure, except this time place the gauge from the bridge string segment to the rear length. Now one has the rear bearing (tangent). Add the front and rear bearings together and one has the net bearing, the same number as would be obtained using method 1 above.

4. Measure the highest distance of deflection as measured from the undeflected string plane. This amount is also known as distance bearing. One can use a giant downbearing gauge with the indicator located over the highest point of deflection and the feet at each termination point to get this number. See *Figure 7.* This approach presents obvious problems as such a tool would need to be adjustable to accommodate front and rear string lengths from two inches to seven or more feet. A more practical approach is to use the appropriate component downbearing gauge table to look up what the deflection is for a given set of front and rear bearings. When rebuilding, one could determine what amount of deflection was desirable, and then use the tables to determine what front and rear bearings would achieve this deflection. See *Figure 8* and *9,* which refer to Steinway M #269177. Suppose the piano were at zero tension, and the soundboard, crown and ribs were in good condition, with .125″ crown in the center of the board. According to one theory of downbearing (A.W. Stokes, *Piano Technicians Journal* July 1976, page 14) the crown should equal the highest point of deflection of the string plane. How

can we achieve this when the soundboard is already glued to the rim? Using the tables one can determine the upper limits of downbearing achievable without its corresponding deflection exceeding the crown of the soundboard. Simply look up .125" in the appropriate table for the string one wants to achieve that deflection in. For the purposes of this discussion, we will assume we want nearly equal front and rear bearings. First locate the diagonal line of figures close to .125". Next, locate two approximately equal bearings whose columns intersect on this diagonal line. In this example front bearing would be .015 and rear bearing would be .012. The deflection would be .120". We would then plane the bridge and/or adjust the rear string rests to achieve these bearings. The net bearing would be .027 at zero tension. With tension on the soundboard this net bearing would decrease as well as the crown. Danger of oilcanning (reverse crown) the soundboard is eliminated, because as the crown approaches zero, so does the downbearing force upon it. *Figure 10* shows a model with which distance bearing can be measured. The model simulates note 49 on a Steinway "M" #269117. The speaking length is tuned to 440 hz. Measurement of the downbearing tangents of the two outer strings showed for each .015 front bearing and .003 rear bearing. The bridge is cut out so that the center string is undeflected. A vertical measurement (distance bearing) from the plane of the two deflected strings to the undeflected string in the center shows a distance of .050". This amount is very close indeed to what we predicted based upon the use of the table accompanying *Figure 10, Figure 11.*

Using the above systems, one can correlate all four types of data and calculations and convert between them with ease.

Now, you may ask, what should the downbearing be? What numbers are preferred? To answer this question, I will refer to the previously mentioned article by former *Journal* Technical Editor Don Galt (*Journal,* May 1970, page eight). Below is an excerpt from that article.

"Baldwin has recently published some valuable information about downbearing, for the guidance of technicians encountering their new Acu-Just hitch pins. This information appears in a booklet entitled "Baldwin Bearing Gauge," which is supplied with the gauge. This data should not be seized upon as being universally applicable to all pianos, but reading the "Notes on Bearing" in the booklet will bring the technician a better understanding of bearing in the Baldwin piano, which will inevitably help him with other pianos as well.

"The knowledgeable article on Pianoforte Manufacture in the *Encyclopaedia Britannica* (mine is the 1947 edition) says that it is agreed that about one-fortieth of the string tension is a suitable amount for each string to press upon the bridge. And this agrees pretty closely with the often-repeated statement that the cumulative string pressure perpendicular to the soundboard is about a thousand pounds.

"In angular terms this means the string should deflect downward over the bridge about 1 1/2 degrees (the angle whose sine is 1/40 or .025). In offset terms, much easier for us to estimate as a rule, this means a downward deflection of 1/8" in a distance of 5". When I speak of downward deflection over the bridge, I mean deflection of the waste length from the straight continuation of the speaking length.

"In 'The Influence of the Soundboard on Piano Tone,' by the German physicist E. Lieber (a report from the Institut fur Musikinstrumentenbau published in *Das Musikinstrument* and translated by Jim Englehardt), the author gives a range of 1 to 2 Kg. for the perpendicular bridge pressure of a string under tension of 70 Kg. This is a range of from 1/70 to 1/35 of the string tension, comparing reasonably with the blanket 1/40 mentioned in the *Britannica* article. This is equivalent to an angular deflection downward at the bridge of roughly 1 to 1 1/2 degrees, or again in offset terms, a deflection in 5" length of from slightly over 1/16" to slightly over 1/8", with the smaller value probably preferred for the mid area of the treble bridge, and the larger for the bass and extreme treble.

"Caution needs to be used in talking about or considering 'thousands of an inch' downbearing as measured with various micrometers available for the purpose. Considerable variations in the geometry of the thing measured is possible, and ambiguous values may be obtained. For instanced, perhaps both the waste length and the speaking length of the string deflect from the flat bridge surface, at equal or differing angles. Or perhaps only one of them does while the other is a straight extension in the plane of the bridge surface. In any of these cases various placements of the micrometer will give various readings. What we are really after is a reliable measurement of the angle of deflection toward the soundboard between the speaking length and the segment directly across the bridge from it."

Figure 10

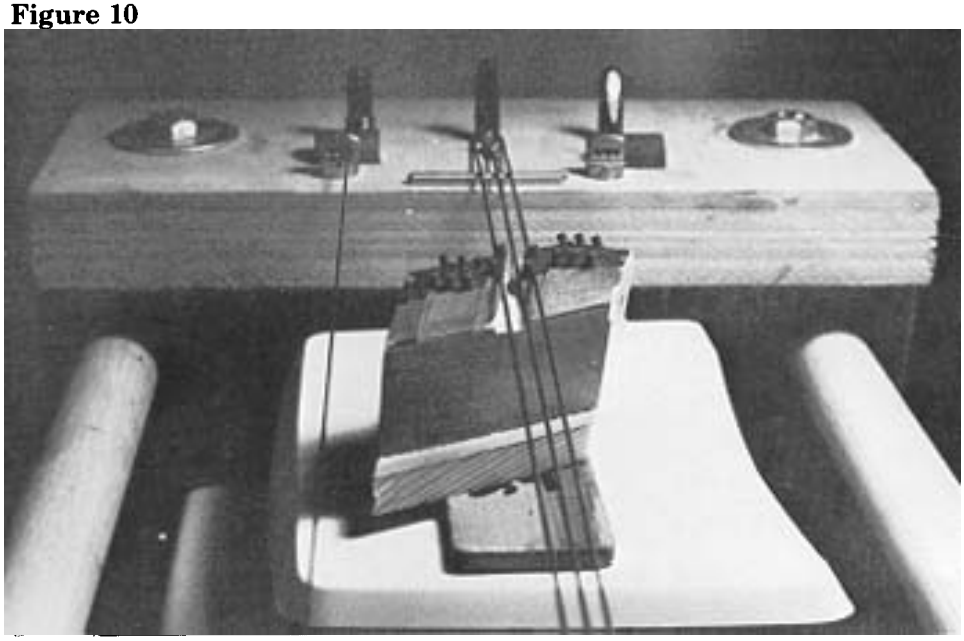


Figure 11

Steinway M #269177

String #49

L1 = 15.375" W = 0.625" L2 = 3.0"

String deflections D1 followed by D2 in inches.

Ø1=	Ø2= 0.0	0.003	0.006	0.009	0.012	0.015
0.036	0.106	0.113	0.120	0.127	0.135	0.142
	0.087	0.095	0.103	0.110	0.118	0.125
0.033	0.097	0.104	0.111	0.119	0.126	0.133
	0.080	0.088	0.095	0.103	0.110	0.118
0.030	0.088	0.095	0.103	0.110	0.117	0.124
	0.073	0.080	0.088	0.096	0.103	0.111
0.027	0.079	0.086	0.094	0.101	0.108	0.116
	0.066	0.073	0.081	0.088	0.096	0.103
0.024	0.070	0.078	0.085	0.092	0.100	0.107
	0.058	0.066	0.073	0.081	0.089	0.096
0.021	0.062	0.069	0.076	0.083	0.091	0.098
	0.051	0.059	0.066	0.074	0.081	0.089
0.018	0.053	0.060	0.067	0.075	0.082	0.089
	0.044	0.051	0.059	0.066	0.074	0.082
0.015	0.044	0.051	0.059	0.066	0.073	0.080
	0.036	0.044	0.052	0.059	0.067	0.074
0.012	0.035	0.042	0.050	0.057	0.064	0.072
	0.029	0.037	0.044	0.052	0.059	0.067
0.009	0.026	0.034	0.041	0.048	0.056	0.063
	0.022	0.029	0.037	0.045	0.052	0.060
0.006	0.018	0.025	0.032	0.039	0.047	0.054
	0.015	0.022	0.030	0.037	0.045	0.052

Other Methods Of Downbearing Measurement

Now in regard to the question, "What's wrong with other methods of downbearing measurement (i.e. narrow center foot type rocker gauges, previous dial gauges, etc.)?" They may work well for you, especially after years of experience in developing the "feel" of them. However, I believe there may be room for improvement and it is in that spirit that I will cite the following example:

Rocker gauges of the narrow center foot type which have one inch spread between their feet attempt to measure the tangent of angle b — see *Figures 1* and *12*. However, the following errors, which unavoidably may be introduced into its measurement make its data unreliable.

1. For a rocker gauge to be accurate, the middle foot must be on the vertex of the string angle. Two problems immediately rear their ugly heads.

a. We don't know where on the bridge the vertex occurs. See *Figure 13*.

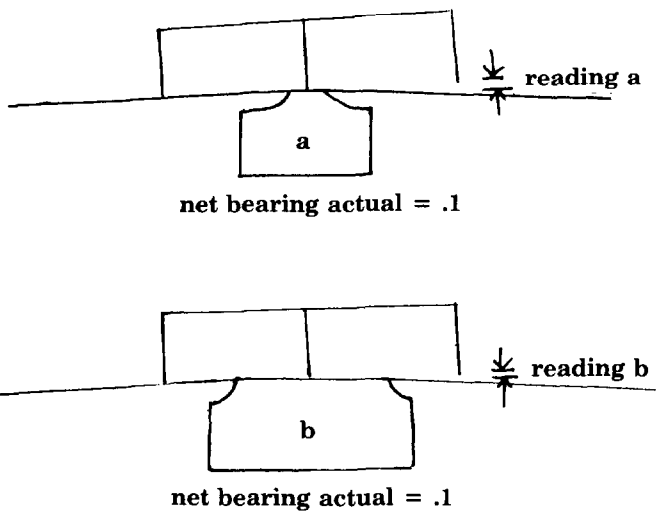
b. We are instructed to place the middle foot of the rocker on the bridge, while in fact example 6b of *Figure 13* shows the vertex occuring above the top surface of the bridge. This introduces significant errors.

2. Bridge widths vary. See *Figure 12*. Here we have a situation where the same exact front and rear bearings exist on two different-width bridges. Where the bearing is in fact identical, a rocker gauge would show two entirely different readings.

Bearing gauges that read out on a dial what a rocker gauge would show with a feeler gauge share the same pitfalls. See *Figure 14*.

Bearing gauges that show an average of the front and rear bearings have the same problems as those of the rocker gauge, plus an additional one. See *Figure 15*. Any slight tilt in the gauge can change readings so drastically that it is practically impossible for two individuals to obtain the same readings. Also, contrary to popular belief, sliding the gauge forward and back between the two bridge pins does not necessarily indicate if you have positive or negative bearing on either side of the bridge.

The carpet thread or fishing line method, used properly with the dampers and strings removed, can yield some good general information (See *Journals* of May 1983, page nine, and January 1985, page 15). This method is useful when determining the proper plate or bridge height when building or rebuilding a piano. However, on a strung piano especially (with dampers and strings in the way), it can be awkward to use and thus may be used improperly with inaccurate information being the result. For example, see *Figure 16*. A piano technician was giving a class at a recent Guild convention. During the class he complained that the strings were not in contact with the bridge and he proceeded to tap them down. After the first class period, this instructor and two



Actual bearing is the same on each bridge, yet a rocker gauge would show reading a to be twice reading b

Figure 12

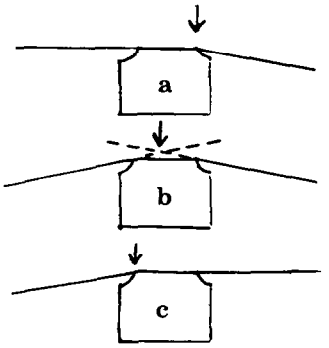


Figure 13

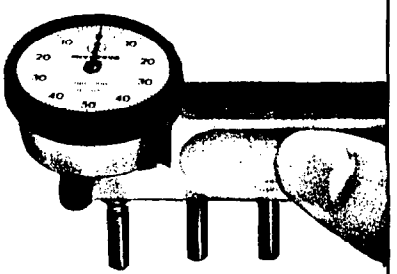
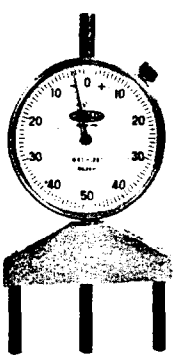


Figure 14

Figure 15



equally nationally known technicians used the carpet thread method to analyze the piano's downbearing. Their unanimous conclusion was that "this piano has negative front bearing," and thus the strings were climbing up the bridge pins, making necessary the tapping of them down to the bridge. Upon hearing of this conclusion after the second class period, I proceeded to measure what they had measured, but used a component downbearing gauge instead of the thread method. According to my measurements, the piano had the opposite condition of that described above. Front bearing was about .030, very substantial indeed. Net bearing was .015, a good number by all accounts. Interestingly enough, there was considerable negative rear bearing — .015 — which in my opinion caused the original complaint of strings riding up the bridge pins and off the bridge.

A number of famous-name piano manufacturers sell new pianos with negative rear downbearing in most of their grands. They maintain that this has no ill effect on the performance of their pianos. Perhaps negative rear bearing can be compensated for by adequate sidebearing. Not being in a very strong position to argue with famous makers, I will concede that issue is open to debate.

This brings us to our next question, "Why do we need to divide net bearing into two components, front bearing and rear bearing?" A piano manufacturer who deserves much credit for the advancements it has contributed in the area of downbearing provides an excellent tool by which net downbearing can be measured. This tool is designed for use on their new pianos, where one can assume certain known factory-established parameters.

"Is a net downbearing measurement sufficient when rebuilding older pianos?" one might ask. For one to say that it is, would mean to assume that it makes no difference how this net bearing is divided up to each side of the bridge. Let us say our net bearing is .015. See *Figure 17. Figure 17 a, b, c* and *d* show four configurations where the overall bearing is .015. Shouldn't we have a gauge that would enable us to differentiate between these four configurations? A net downbearing gauge would not. A component downbearing gauge allows us to individualy identify front and rear bearing conditions in each. Which of *Figure 17* is most desirable? Is it most desirable to have positive bearing on both sides of the bridge?

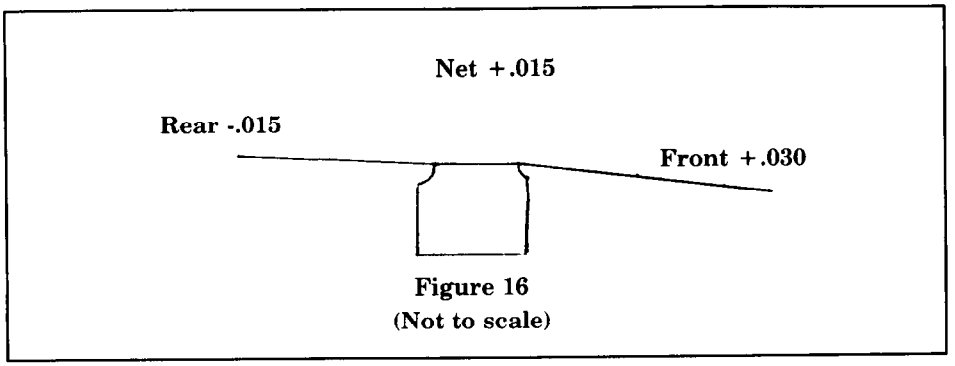


Figure 16
(Not to scale)

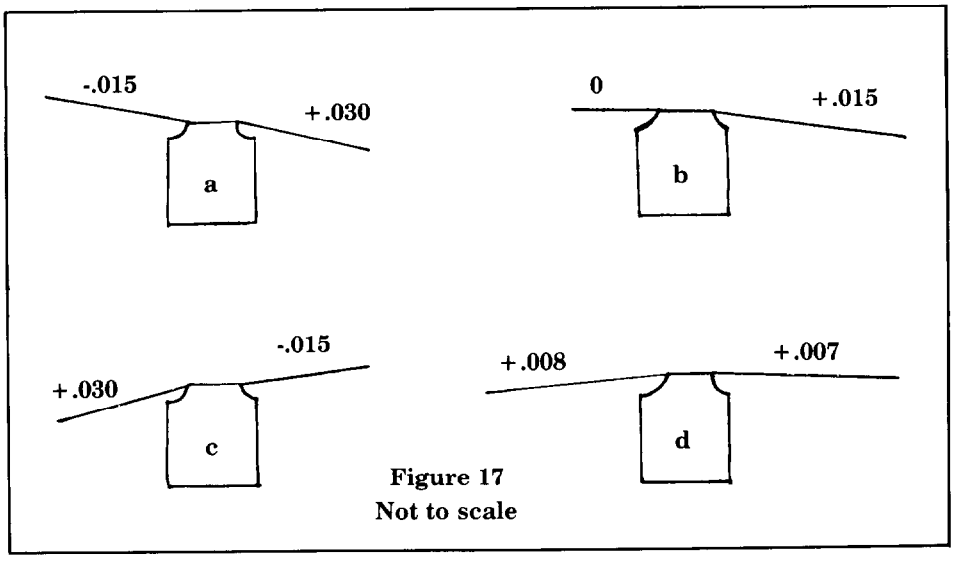


Figure 17
Not to scale

Cristofori Piano Use — Dropped in Italy, Continued In Iberian Region

Jack Greenfield
Chicago Chapter

Tuscany Loses Its Independence

Events in 1731-1732 brought the Medici dynasty and its rule of Tuscany closer to an end. Concurring with the death of Cristofori was the passing of Princess Violante, widow of Prince Ferdinando, in May 1731. This was a great personal loss to Grand Duke Gian Gastone, who had had a deep regard for his sister-in-law. He also finally had to accept the humiliation of having his successor, the Spanish prince he had no voice in choosing, and Spanish troops enter Florence.

Prince Don Carlos, designated heir to the Medici by the 1718 agreement of the Quadruple Alliance, had become impatient and wanted to proceed in 1731 with formalities establishing him Grand Prince of Tuscany. Without consulting Gian Gastone, the members of the Quadruple Alliance agreed to the Prince's entry and the stationing of a garrison of Spanish troops in Tuscany. Spanish troops arrived in October 1731. Prince Don Carlos, delayed by illness, made his formal entry into Florence later, in March 1732.

The arrival of the Prince and the Spanish troops did not cause any trouble or unrest. Don Carlos, the son of King Phillip's second wife, Elizabeth Farnese, an Italian, had been brought up by Italians and had Italian characteristics. His relationship with Gian Gastone proved harmonious, and the Grand Duke soon looked upon him as a close member of the family. He was also well-received by the population. The Spanish soldiers, acting friendly and with plenty of money to spend, caused no friction with the citizens, although the people had to bear the cost of the troops by extra taxes.

It seemed that Tuscan succession finally had been settled, but this was not so. In 1733 the European power struggle broke out into warfare again, this time between France allied with Spain against Austria. Peace was declared in 1735, and the participants again decided to rearrange control of the areas of Italy and other small principalities they commanded. France obtained Lorraine while Spain regained Naples and Sicily from Austria. In return, Austria was given sovereignty over Tuscany and other parts of Italy. As a result, Don Carlos left Florence for Naples to receive the title "King of the Kingdom of Naples and Sicily." Francis Stephan, a young nobleman, formerly Duke of Lorraine, was designated successor to Gian Gastone as Grand Duke of Tuscany. Francis Stephan, the future son-in-law of Emperor Charles VI, was also in line to ascend the throne of Austria.

Domenico Scarlatti

The End Of The Medici

Austrian troops replaced the Spanish garrison in Tuscany in January 1737. Hastened by the shock and turmoil of events, the deterioration of Gian Gastone's poor health accelerated, and his death came in July 1737. The new Grand Duke Francis Stephan could not be present but sent his repre-

sentatives to take power; he had more interest in Austrian affairs. Since he did not intend to spend much time in Tuscany, he designated a Council of Regency including his representatives as well as some of Gian Gastone's ministers to run the government. A large number of minor government officials displaced from Lorraine were also brought in for lower echelon duties. Political, social, and economic reforms begun by Gian Gastone were continued, but the routine day-to-day administration by the imported Lorraine bureaucracy and crude behavior of the Austrian troops aroused hatred and resentment.

Princess Anna Maria continued her residence in the Pitti Palace until her death in 1743 at the age of 75. She was deeply mourned by the people of Florence who looked back on the great days of the Medici with pride and a sense of loss. In her will, Anna Maria left to the new Grand Duke and his successors all the property accumulated by the Medici, palaces and villas, pictures, statues, jewels and books, on the condition that they all remain in Tuscany to be available for the pleasure and benefit of the public of all nations. No information on pianos in the Medici estate has ever been published. The last known earlier complete inventory of Medici instruments was the list Cristofori prepared in 1716. A similar list which might have been prepared by his successor in 1731 or later has not been discovered. There are no Cristofori pianos in the Medici instrument collection now in a museum in Florence.

Interest In Piano Fades in Italy

The musical activities of the grand ducal court, the church and the social circles continued under the new Grand Duke and his Lorraine-Hapsburg successors who ruled Florence, except during the Napoleonic period, until the unification of Italy in the 1860s. The Hapsburgs had a long tradition of musical support. While the piano developed in other countries they controlled, devotion to opera and violins crowded out most interest in pianos in Tuscany and elsewhere in Italy until later in the 19th century.

"In her will, Anna Maria left to the new Grand Duke and his successors all the property accumulated by the Medici, palaces and villas, pictures, statues, jewels and books, on the condition that they all remain in Tuscany to be available for the pleasure and benefit of the public of all nations."

Scarlatti's Keyboard Compositions And The Piano In Spain

Kirkpatrick's discovery of evidence of Florentine pianos in the middle 18th-century Spanish royal court has drawn the interest of music historians seeking to determine the extent of Domenico Scarlatti's use of the early piano. While there is definite evidence on the date of only one, it can be speculated that all pianos were obtained during the period 1731-1737 when Spanish troops were garrisoned and Don Carlos visited Florence. This was after Scarlatti had been brought to Spain in 1729 with Princess Maria Barbara, the bride of Crown Prince Ferdinand, half brother of Prince Don Carlos. After his arrival, Scarlatti devoted himself mainly to keyboard performance and composition for the Prince and Princess and had little involvement later in the grandiose production of opera initiated by Farinelli, the famous singer who served as musical advisor to King Phillip V in Spain beginning in 1737. Opera performances were given in a private royal opera house as well as in a public theater.

In 1738, at the age of 53 years, Scarlatti published the first music demonstrating his originality and command in musical composition for the keyboard, *Essercizi per Gravicembalo,* a collection of one-movement etudes similar in purpose and intent to the later ones by Chopin. Published in London, the volume brought him fame in England but drew little attention in other European countries.

When Ferdinand and Maria Barbara became King and Queen after the death of King Phillip in 1746, Farinelli and Scarlatti continued their activities as before. Although Farinelli now acquired greater influence on Ferdinand and Maria Barbara, Scarlatti did not resent his lesser status and the two remained good friends.

There are approximately 550 Scarlatti keyboard works known today. Most appear in the collection of sonatas he gathered and copied in 13 volumes during the last five years of his life, 1752-1757. Scarlatti's original manuscripts have never been found, but artistically prepared and elaborately bound sets copies for the Queen still exist. In addition to the 13 volumes numbered I-XIII, copies of collections gathered earlier by Scarlatti in 1742 and 1749 were numbered XIV and XV and included in the sets for the Queen.

Scarlatti left five children by his first wife, who died in 1739, and four by his second wife. None of his children became musicians. Queen Maria Barbara died in 1759, and King Ferdinand in 1760. He was succeeded by his half-brother Don Carlos who left Naples to become King Charles III of Spain. King Charles, an efficient, able sovereign, did not care for opera. Soon after his arrival in Spain, he dis-

Spanish Pianos

No information has been published on whether any Spanish harpsichord makers of Scarlatti's time copied Cristofori pianos as was done in Portugal. The earliest dated Spanish piano manufacturers listed by Alfred Dolge are 1830 for one in Barcelona and 1838 for one in Madrid.

missed Farinelli, who retired to Bologna taking the Florentine piano, two Spanish harpsichords and the large collection of Scarlatti compositions left to him by the will of Queen Maria Barbara.

Kirkpatrick could find no record of keyboard instruments in the Scarlatti estate among the Scarlatti family papers he examined. These documents included only two of the seven inventory lists of Scarlatti's estate known to have been prepared. The missing inventories may have included some pianos.

Although Scarlatti's keyboard compositions are excellent in piano performance, Kirkpatrick believes they were intended for the harpsichord. He reasons that the early piano was a subdued instrument lacking the brightness of the harpsichord for solo use, and most of Scarlatti's later sonatas contain notes outside the range of the Queen's pianos. The conversion of two of the pianos to harpsichords also indicates the greater use of the harpsichord. Some sonatas with a narrower range and a slower-moving bass line in volumes I and II of the Queen's collection, however, may have been experiments by Scarlatti in writing for the piano. The use of the piano appears to have been preferred for accompanying vocalists, as expressed by Farinelli's fondness for the instrument.

Scarlatti's Tuning

While Scarlatti based the harmonic structure of his compositions on the principles of equal temperament, Kirkpatrick implies he did not actually obtain equal temperament in tuning. Kirkpatrick believes that even the most experienced harpsichordist would temper tuning to favor certain keys while still allowing modulation, the type of intonation now termed "well-temperament," a term not in use when Kirkpatrick wrote his book. Considering Scarlatti's Italian musical background, he could have tuned in the Valloti temperament used in Italy during his years there. This temperament has six pure fifths and six 1/6-comma tempered fifths, about four cents less than pure, instead of the 12 1/2-comma equal tempered fifths of equal temperament (*Piano Technicians Journal,* pp. 20-21, August 1984).

Portuguese Builders Copy Cristofori Piano

In addition to the composition of the piano sonatas dedicated to Prince Don Antonio of Portugal in 1732 by Lodovico Giustini, a recent study of early pianos made by Portuguese builders supports the contention that as a result of Scarlatti's service to the royal family, Cristofori pianos were introduced into Portugal. Stewart Pollens of the New York Metropolitan Museum of Art published the findings in his examination of three pianos built by Portuguese makers and now in instrument collections in Lisbon, Brussels, and London ("The Early Portuguese Piano," *Early Music,* February 1985, PP. 18-27). Although these instruments were built after the middle of the 18th century, except for a few details, the similarities in design lead to the conclusion that they were copies of Cristofori pianos.

Vienna's Influence On Florentine Music

Support for music was not diminished in Florence under Austrian control. In addition to the *maestro di cappella*, Grand Duke Francis Stephan added an orchestra director to the court musical staff in 1738. As a result of Tuscany's connection to Austria, Viennese influence was introduced into Florentine musical activities. This was reflected in the growth of instrumental music and the opening of a piano factory in 1828 for building Viennese-type pianos in Florence.

PIANO BRIDGES

Repair And Replacement

Rob Stuart-Vail
Boston Chapter

Treble Bridge Caps

If you, the technician, are not prepared to construct a new bridge cap, you may want to remove the old cap and send it to the supply house as a sample so that a new one can be made.

Before laying off the strings, check the downbearing on the bridge, using either a dial gauge or rocker gauge, and if the bridge is not totally defunct, check for sustain on the strings by plucking them. Take notes on what you find, and after removing the strings, inspect the surface of the bridge for deep string grooves (which might indicate excessive downbearing) or none at all (insufficient bearing). This is sometimes the only clue available to the bridge-cap maker, and if it is confirmed by your other information it will be helpful.

Measure the height of the bridge at the ends and in the middle. If the measurements differ, measure in two other places, so that you have a chart of the taper, which can be in either the bridge gain or in the cap. If possible, make a tissue-paper pattern of the holes in the cap by pinning a strip of thin paper on it and rubbing lightly with a pencil.

Great care should be used in removing the cap so as to preserve as much of the original pin pattern as possible. An ideal tool for removing the bridge pins is carpenters pincers, which provide great leverage with minimal effort. A small piece of veneer or thin wood can be slipped under the jaws of the tool to protect the bridge cap. Keep track of the pins to avoid losing them under the plate, where they might cause trouble later on. If only part of the cap is defective, cut cleanly with a small saw at the point where you are going to join the new cap to the existing, serviceable area of the old one. Here are some methods of removing bridge caps.

1. *Heat* (heat gun, steam iron, heat lamp) applied judiciously. Work your flat-blade felt knife under the cap a bit at a time. Don't hurry. If you can get the cap off in one piece, you may find it warped from the heat. Just wet it with a damp cloth, clamp it flat to a bench and it will dry out straight again.

2. *Acid* to soften the glue. Vinegar is acetic acid in a very weak solution. A more powerful version is glacial acetic acid, 99.5 percent pure. It is very effective but because of its fumes is tricky to use. Special ventilation is recommended. This method works best on upright pianos, where the fluid can be applied directly to the glue line.

3. *Sawing* (hand saw, sabre saw,

Parts of Bridge:

Plate (soundboard strip)
Apron (suspense)
Gain (body)
Cap
Pins

Special Areas Of Attention

Terminations
Notchings
Chamfers
Pin Angles
Index Holes
Downbearing
Sidebearing
Wood Grain

etc.) or *chiseling*. Both are difficult to accomplish without damaging the bridge gain or base.

If your bridge cap is in pieces, it is advisable to number them on the smooth underside and lay them on a strip of masking tape so they can be handled at the supply house.

Your new bridge cap will come to you with the holes for the pins drilled, but you must prepare the bridge gain, the base of the bridge, for gluing on the new cap. Here are some suggestions.

If the old cap was removed without damaging the gain, just plug the old pin holes. Some materials you could use for this purpose are round toothpicks with the ends cut off, or wooden hospital swab sticks, available from some drug stores. Dip the wooden stick in glue, push into the hole and clip off with diagonal pliers. The plugged area can be sanded immediately with 80-grit sandpaper on a block, and scraped smooth with your felt knife. It is then ready for gluing on the new cap. If the holes are not plugged, the new cap will probably split as soon as the strings are pulled up to pitch, because the pins will move in the spaces left under the new cap.

If the bridge gain was damaged while removing the cap, consider the possibility of chiseling away enough wood to level the surface. Be careful to take enough measurements so that you can ask the supply house to make the new cap thicker by the desired amount. Using metric or decimal measurement is easier than inch-scale.

If the bridge gain is split, use 24-hour epoxy, not glue, for the repair. Clamp the split, if possible, to return the gain to its original shape.

Installing Your New Bridge Cap

You may notice small holes drilled near the ends of your new bridge cap. These are indexers, used to locate a pattern to the new cap during manufacture. Small nails (4d finish) are sometimes used as locator pins. The holes can be drilled with a #46 drill (.081"). You can use the same procedure to locate the new cap on your bridge gain. It is necessary to do this so that the cap will not slide during gluing up and clamping. There are many methods of clamping while the glue dries. Some are as simple as piling heavy weights on top of the new cap (in a grand or tilted upright). For best results some clamping should be done. Where there is no possibility of using mechanical clamps or go-bars, you could use screws and washers. Drill through the center line of the cap into the bridge gain in several places on two-inch centers (approximately) as follows: drill pilot holes with #19 drill (.166"), then drill with #11 drill (.191") through the cap and into the gain far enough to accommodate a 1 1/4" #10 pan-head screw. Lubricate the screws with soap and place a fender washer (1/4" by 1 1/4") under each screw. Dry-fit the whole assembly before gluing. Allow at least 12 hours setup time for the glue. If the screws are difficult to remove, heat them with a household iron for a few moments first. After removing the screws drill the holes larger to take hammer shanks, which will plug the holes. Touch up the ends of the shanks with graphite to hide them.

The next phase of the installation is to drill through the pin holes in the new cap, down into the gain, using the same size drill, so that the bridge pins will have a secure footing. This is why it was so important to plug the old pin holes in the gain.

The size difference between the drilled hole and the bridge pin will be three or four thousandths of an inch. The accompanying chart shows the most popular sizes, with the smallest being used in the high treble section.

The angle of drilling is usually about 17 degrees, with a slight swing to the outside of the bridge

Pin #	Size	Drill #	Size
6	.076	49	.073
7	.086	45	.082
8	.096	42	.0935
9	.109	36	.1065

of about three degrees, making a compound drilling angle. Stick a bridge pin in a hole as a guide and move it down the line as you go.

The depth of drilling must be controlled, whether or not you plan to grind down the tops of the bridge pins to make them all the same height. Depth gauges like masking tape, dye or ink on the drill bit or metal drill stops can be used, but a good mechanical drill stop can be made quickly from a wooden letoff rail button. The hole is already started, just thread it onto the drill bit and adjust the bit in the chuck for desired depth.

Finally, it's time to drive in the bridge pins: get them all started with light taps, then use a nail set to bottom them. If there is room to use a sander to grind down the pins so that their height will be uniform, you may find that easier than filing them, but be careful of the heating effect caused by the grinding. Except for the contrast between the new and the old areas of the bridges and the problem of uneven height, there is no need for the pins to be filed down.

Some recent articles in the *Piano Technicians Journal* which may be helpful are: "Definition of Rebuilt Piano" (May 1980, page 37); "Grain in Bridges" (June 1980, pages 15-16); "Wood Structure" (July 1980, pages 8-10); "Wood Species" (August 1980, page 8); "Recapping Bridges" (August 1980, pages 10- 13); "Bridge Making" (August 1982, pages 22-27); "Vertical Rebuilding" (April, May and June, 1983, all pages 8-11).

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1985 Technical Index

Compiled by Yoshiko Okamura
Editorial Assistant

There is an index for all technical articles that appeared in the *Journal* through December 1985. Index entries have been divided into nine categories used in the *Classified Index to Published Piano Technology*:"Piano — Musical Instrument"; "Manufacturing"; "Tools and Equipment"; Reconditioning (Main Body and Fixed Parts)"; "Reconditioning (Moving and related Parts: Action)"; "Regulating"; "Tuning"; "Voicing"; and "Organization, Literature, People."

The Technical Forum, a monthly column edited by Technical Editor Jack Krefting, has been treated separately. It is listed by month with subjects listed in order of appearance. Names of those who contributed either questions or technical information are listed in parenthesis.

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Fandrich, Del, *All About Adhesives* — Epoxies: Aunt Mathilda's Teacup and Wooden Boats; October 1985, pp. 16-20.

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Hassig, Richard, *Tools of the Trade* — Using the Accu-Fork; December 1985, p. 14.

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Getting The Organizational Spirit!

Keeping That Feeling From Slipping Away

M.B. Hawkins
Vice President

When classes are finished at a seminar or conference and people are busily closing their accounts and checking out of the hotel, have you ever noticed how alive the air is?

Transportation arrangements are being made to accommodate those having to catch planes or trains at the same time that many hugs and handshakes are exchanged. Who could ever interpret this activity as being anything less than exciting? It is times like these when most everyone would admit that the organizational spirit is high.

How does one keep this feeling from slipping away? I'm not sure that I have the entire answer to this question. Some things, however, can be pointed out which will certainly help this positive high to last.

If two or more people are traveling together, the classes they attended will hopefully be reviewed on the way home. Information will be exchanged which generally reinforces whatever has been gained from those classes attended. Perhaps notes taken in class will be studied (if you are not the driver, of course, or if you are traveling alone and not by auto.) If the classes were taped, this is a good time to review the tape.

All of this is good, but remember it is still the last day of the event so it's rather natural that enthusiasm would still be high. This level of enthusiasm will more than likely be present for at least a week with no problem. The concern is what to do in order to perpetuate the feeling which was so apparent at check-out time.

If you will take the time to sit down and recreate key points of the event now and then, much of what happened will tend to remain more vivid in the mind's eye. Also arrange to talk about the event by giving an oral report at your chapter's next meeting. Let's stick with this point for a little longer. Future technical sessions can be created from any given class, particularly if more than one person from your chapter attended the event. The more discussion generated relative to seminars/conferences, that longer a clear picture will remain and the longer it remains the easier it is to maintain that feeling which was so apparent at check-out time.

Why not encourage an article in your chapter's newsletter about the conference? There could be a complete review in the newsletter or a series of articles could be developed highlighting each of the classes attended. There is still another way to keep the event alive. "Chapter Notes" in the *Journal* affords an additional opportunity to feed off the recent seminar. Tell about your chapter members who attended.

The new acquaintances which were made could be corresponded with and I would hope some of these acquaintances would develop into friendships. If they were non-members from your area, they can be invited to your chapter meeting. When they attend an additional opportunity is available to talk about the recent conference. They can be asked to give their impressions. The event could have been as long ago as three or four months.

I believe that, properly handled, acute awareness of any given event can be maintained well up to the threshold of the next one, which will directly affect attendance from your chapter. I invite you to join me in increasing the mileage we can get from any event we attend.

Monthly Membership Report

Region 1

Boston Chapter 021
8 Wilensky, Alan
87 Bridge St.
Salem, MA 01970
(New Member)

Rhode Island Chapter 029
1 Johnson, Wade C.
10 Grant Street
Providence, RI 02909
(Reclass from Apprentice)

Montreal Chapter 060
4 LePage, Roger L.
891 Belmont
McMasterville, PQ
Canada J3G
(New Member)

5 Beauchamp, Jean-Marc
236 10th Ave.
Lachine, PQ
Canada H8S 3E5
(New Member)

5 Pelletier, Ronald
2240 Madison, Apt. 15
Montreal, PQ
Canada H4B 2T6
(New Member)

5 Sienac, Jean Louis
185 De La Montrent, St.
Basile Le Grand
Quebec, PQ
Canada J0L 1S0
(New Member)

8 Boldue, Jean
2123 Notre Dame
Legrace
Longevil, PQ
Canada J4J 3G6
(New Member)

L.I. Cristofori Chapter 118
8 Hurrell, Keith T.
61 State Street
Rockville Centre
Long Island, NY 11570
(New Member)

Capital Area, NY, Chapter 122
8 Thompson, Thomas D.
424 Sand Creek Road, Apt. 614
Albany, NY 12205
(New Member)

Syracuse, NY Chapter 131
8 Spateholts, Lenore S.
PO Box 172
Old Forge, NY 13420
(New Member)

Buffalo, NY, Chapter 142
8 Hannigan, Patrick L.
Dominion Rd., Box 222
Ridgeway, ON
Canada L0S 1N0
(New Member)

Pittsburgh, PA, Chapter 151
6 Trombino, Robert A.
1049 Broad Ave.
Belle Vernon, PA 15012
(New Member)

Erie, PA, Chapter 165
8 DiGiorgi, Loren R.
922 1/2 E. Washington St.
New Castle, PA 16101
(New Member)

Reading-Lancaster, PA, Chapter 195
1 Crowther, Frederick J.
13 Hastings Dr.
Horsham, PA 19044
(Reclass from Apprentice)

Region 2

Washington, D.C. Chapter 201
5 Nichols, Gary W.
9711-51st Avenue
College Park, MD 20740
(Reclass from Student)

Hampton Roads, VA, Chapter 233
1 Johnson, Robert E.
635 Carolina Road
Suffolk, VA 23434
(Reclass from Apprentice)

Palmetto-Florence, SC, Chapter 292
1 Adair, John E.
105 Cyclomen Ct.
Columbia, SC 29210
(Reclass from Apprentice)

Northwest Florida Chapter 325
1 White, Wayne A.
Route 5, Box 176C
Cantonment, FL 32533
(Reclass from Apprentice)

Memphis, TN, Chapter 381
8 Blankenship, Robin
7955 Martha Street
Millington, TN 38054
(New Member)

Region 3

Oklahoma Chapter 731
1 Trawick, Ross E.
3200 E. Bartel Rd.
Oklahoma City, OK 73121
(Reclass from Student)

Houston, TX, Chapter 771
1 Collier, James L.
157 Soren Lane
Houston, TX 77076
(New Member)

1 Matis, Keith E.
1145 W. 17th St.
Houston, TX 77008
(New Member)

4 Sanford, Merle L.
1503 Harding
Pasadena, TX 77502
(New Member)

San Antonio, TX, Chapter 782
1 Childs, Leonard W.
7867 Lark Ridge
San Antonio, TX 78250
(Reclass from Apprentice)

Austin, TX, Chapter 787
5 Long, Larry E.
12925 Pegasus
Austin, TX 78727
(New Member)

New Mexico Chapter 871
1 Wagoner, Joan B.
Route 9, Box 60
Santa Fe, NM 87501
(New Member)

Region 4

Dayton, OH, Chapter 454
5 Gordon, Ronald D.
Box 328
New Knoxville, OH 45871
(New Member)

Detroit — Windsor Chapter 481
1 Bargeon, Jeffrey J.
18800 Outer Drive
Dearborn, MI 48128
(New Member)

6 Bateman, Lawrence J.
118 Potawatomi Blvd.
Royal Oak, MI 48073
(New Member)

6 Karstofsky, Daniel B.
25580 Dundee
Huntington Woods, MI 48070
(New Member)

8 Taylor, Sidney W.
223 Sycamore St.
Wauson, OH 43567
(New Member)

Lansing, MI, Chapter 489
8 Ramig, Jacob III
3456 Overton
Pontiac, MI 48054
(New Member)

Waukegan, WI, Chapter 600
1 Guenther, Robert L.
711 Monroe St.
Evanston, IL 60202
(New Member)

Region 5

Twin Cities, MN, Chapter 553
8 Finger, Paul L.
1060 Pleasant Ave.
St. Paul, MN 55102
(New Member)

8 Gagnon, Bill V.
6215 11th Ave.
Richfield, MN 55423
(New Member)

Kansas City, MO, Chapter 641
1 Buntemeyer, Loren J.
RR 6, Box 104B
Lawrence, KS 66046
(New Member)
5 Harrington, David R. Jr.
516 Walnut
Columbus, KS 66725
(New Member)
5 Volley, Gene E.
1908 S. Locust
Pittsburg, KS 66762
(New Member)
8 Knaak, Richard J.
RR #2
Mayella, KS 66509
(New Member)

Region 6

Los Angeles, CA, Chapter 901
8 Aches, Clifton J.
319 "A" Main St., Apt. 8
Culver City, CA 90232
(New Member)
8 Geller, Mallory R.
1649 S. Hobart Blvd.
Los Angeles, CA 90006
(New Member)

Orange County, CA, Chapter 926
8 Miyashiro, Ralph L.
114 Loma Lane, Apt. 4
San Clemente, CA 92672
(New Member)

Membership Classes

1 Registered Tuner Technician
2 Guild Sustaining
3 Chapter Sustaining
4 Allied Tradesman
5 Apprentice
6 Associate
7 Honorary
8 Student
9 Affiliate

We herald and greet the year '86

With a glory and hope that's a sure-fire mix.
In New York harbor Miss Liberty'll be regowned,
Her fame and her beauty still world renowned.
In Las Vegas, Nevada — our 36th state,
The Guild's next convention has a July 21st date.

The Sagebrush State has legalized much,
Like gambling, bordellos, ghost towns and such.
Though the future is bright, rosy and live,
Let's review for a bit, the year '85.
There's Gerry Ferraro, Beverly Sills, Sally Ride —
Brave women, good humored, each hit her stride.

But closer to "home" is our Auxiliary membership,
Each gal and guy extends good fellowship.
With structure and guidance from prex, Louise Strong
Our goal, process and growth never went wrong.
Away out on California's golden coast,
Norma Lamb, our VP, worked hard without boast
Helena Thomas recorded; Bert Sierota corresponded.
Other facts, figures and finances, Kathryn Snyder pondered.

At our "International" in Kansas City, MO.
Eight former Auxiliary presidents came to say "hello."
Ruth Pollard from Texas who always attends,
Dessie Cheatham, Lu Preuitt, Helen Pearson, our friends.
Esther Stegeman, Ginny Russell were also on deck —
Plus Jewell Sprinkle, Julie Berry to complete the octet.

Several of our California gals were there —
And greeted one and all with special savoir-faire.
No one could call her a social climber,
That's L.A.'s own, Doro Odenheimer.
Both Grace Mehaffey and Marguerite Shipp
Never once regretted they'd made the big trip.

From the east, from the south and points in between
Celia Bittinger, Mabel Hiatt, Helen Desens were seen.
Marge Evans, Mimi Drashe and dear Eleanor Ford
Guaranteed that our meeting was one of accord.
To sterling chaps like Ron Kistler, we note
Each Auxiliary member gives him the vote.
His well prepared classes on debits and assets,
Help clarify taxes in all of its facets.

In another line or so this doggerel will end,
With a hearty salute to another dear friend —
That's our new vice president, who is so compliant:
Our Auxiliary Exchange Editor, Ginger Bryant!!!

— Agnes Huether

The Auxiliary Exchange

From The President

New Year's Resolutions! We make all kinds of them and keep few! Maybe we should look at our old resolutions and resolve to continue or to renew those. On the way home tonight I saw a sign in front of a church. It read "The shortest distance between two people is a smile." What a lovely way to start a New Year! A smile costs so little and takes fewer muscles than a frown. Even a shy person can make new friends with a smile. Looking forward to new friends, another year and new challenges should make us all smile.

So maybe you had some bad experiences or an illness or even surgery in 1984! Start with a clean slate and an optimistic viewpoint and the New Year will be what you want it to be. For you will make it that way and your mood will be picked up by your friends and acquaintences everywhere you go. What a wonderful way to begin again! Happy New Year!

Louise Strong

Fall Seminars

This fall I had the opportunity to attend two regional seminars, one in Wisconsin and one in Ohio. From what I have observed, the Auxiliary activities at Piano Technicians Guild seminars are similar in all the regions with notable exceptions of Auxiliary activities at the annual California and Pennsylvania conferences.

In California and Pennsylvania large groups of spouses turn out for the activities, and many people are involved in planning and hosting the spouse program, but in most other areas the turnout is a small but friendly group of 10 to 15 people with most of the planning being done by an even smaller group. The people do not usually know each other very well at the beginning of the weekend but by Sunday morning some new friendships have begun. Any spouse program, large or small, enriches the quality of time for the participants and facilitates them getting acquainted with people and sharing some of the technicians' excitement about the Guild.

In Madison, WI, one of the organizers of the spouse activities was **Martha Kilgour**, a technician who wanted to make sure the spouses attending the conference enjoyed themselves. **Connie**

Jones, wife of technician **Joel Jones**, was on hand to make sure everyone benefitted from the conference, too. Even **Dick Wolf**, a staff member from the University of Wisconsin, took time out from planning for the technicians to escort the vanload of spouses on a tour to the University of Wisconsin arboretum. Martha, who is a part-time naturalist when she is not tuning pianos, pointed out many interesting aspects of the arboretum as we zipped along in the van, weaving around hardy football fans on their way to the game in the rain.

Dick Wolf wasn't the only wolf on hand that weekend. The **Paul Wolf** family, formerly of Michigan and now newly settled in Kansas City, came to the seminar on their way home from a house-hunting trip to Kansas City. Several of the Guild people from Chicagoland escaped to Wisconsin with their wives for the seminar: the **Greenfields**, the **Quints**, and the **Trempers**, to name a few. Two brave souls, **Dick** and **Shirley Truax**, not only came all the way from Pennsylvania to attend this conference...*but they camped.*

Many families found time for a relaxing dip in the guesthouse pool. Saturday afternoon many of the spouses met at the Elvehjem Museum of Art for a guided tour. Saturday evening was a time to enjoy the banquet which boasted great food, good music, short speeches and lots of door prizes.

One person missing from the Wisconsin Days seminar who would have undoubtedly much preferred to be there was the wife of CERVP **Dean Thomas**. Dutiful **Helena** drove Dean to the airport in Pittsburgh but had a long journey home because the car "died" that day. Dean said she was waiting for the wrecker as his plane took off.

Our next seminar took place a few weeks later in Dayton, OH, just as the trees were at their peak of fall color. **Jeannine Geiger** remembered what a fine Auxiliary program that the Dayton Chapter sponsors, so she made it a point to come home to Ohio for this one with husband **Jim** (and to visit some of their Ohio- based children along the way). When we walked into the hotel we were greeted by the entire Dayton Auxiliary planning committee: **Margaret Frazer**, **Helen Hollingsworth**, **Pat Harris**, and **Nancy Strouss**. These people had planned a great program for us, and even though there were less than a dozen spouse registrants, we enjoyed everything very much.

Each spouse received a cup brimming with small presents and booklets about the area. Each table at the banquet was decorated in a fall leaf motif with a music box grand piano in the middle (a prize which, I might add, this writer was lucky enough to win at our table). On Saturday morning, brave Pat slid behind the wheel of an enormous van and guided us around Dayton with tour guide Margaret at her side. By the time we returned to the hotel we were ready to rest and relax by the pool or in the hospitality room. **Ginny Russell** represented Cleveland, **Julie Berry** was the Indianapolis contingent, and **Eleanor Miller** came from Pennsylvania, with most of the others coming from points between. This was a first conference for several.

On Sunday morning we each had the opportunity to make a silk flower corsage under the guidance of an expert. Speaking of experts, those Dayton ladies know how to make a person happy to attend one of their conferences. All too soon the weekend was over and we were on the road home talking about what had happened, what friends we had gotten a chance to see and what things we had learned and discussed.

— **Julie Berry**

"Far Above Cayuga's Waters..."

...In Ithaca, NY, the New York State Convention was held, and Auxiliary members and friends were there in numbers. Officers included **Bert Sierota** and **Kathryn Snyder**. Past officers were **Agnes Huether**, **Arlene Paetow**, **Ginny Russell** and **Shirley Truax**. Among the list of consistent attendees were: **Celia Bittinger**, **Lynda Smit**, **Zee Hawkins**, **Marge Moonan**, **Marge Williams**, **Deborah Large**, **Pat Gillespie**, **Joan Pulsifer**, **Barbie Reed**, and many new friends. One very special guest was present...**James Smit**, four-month-old son of **Bob** and **Lynda**.

Friday was spent getting caught up in "*What's been happening*?" On a beautiful New York Saturday we took a tour of the Corning factory and outlet store. (Lucky the van had lots of storage space as we bought them out). The hour drive and the "*Autumn Leaves*" made this a lovely experience. (**Bill Paetow** joined us as chaperone and mascot). Saturday evening was our delicious banquet buffet, followed by door prizes, (one won by "*Bubbles*"), and our usual sing-a-long.

Sunday morning found the "*Belles of the Ball*" lounging and conversing about the fun time we had and looking forward to "*When We Meet Again!*" Time flies when you're having fun and we all had fun.

— **Ginny Russell**

Sunny San Diego In February

The California State Convention, hosted by the San Diego Chapter, will be February 21-23 at the Town & Country Inn, a spacious hotel which features four swimming pools, saunas, numerous restaurants and is located adjacent to Fashion Valley, one of the area's largest shopping centers.

A fun-filled and interesting schedule of Auxiliary events is planned. Registrants will have the opportunity to tour the venerable Hotel del Coronado, a noted 19th-century Victorian resort-hotel. The del Coronado is a favorite location for movie makers ("Some Like It Hot," "The Stuntman," etc.) and its many white cupolas would become immediately familiar to anyone who goes to movies or watches TV. The tour will also include the Old Town Historic Park. Rounding out the weekend will be a morning at San Diego's famous Zoo in Balboa Park. This fabulous zoo is known throughout the world for its rare collection of animals and beautiful landscaping. Although San Diego has no Auxiliary Chapter, **Patty Mannino** volunteered and came up with this outstanding program.

CHRISTMAS IN JULY

LAS VEGAS — 1986

As this is being written (November) many projects are already under way and some even completed! The Los Angeles Chapter are devoting all of their meetings from November until the convention to making things for *Christmas In July*. **Kathryn** and **Willis Snyder** already have something completed and considering Willis' great skill and dedication to perfection, it promises to be something special.

Remember — your donation can be anything salable. It doesn't have to be Christmas-oriented. While there will be some handmade ornaments on the tree, and they *will* be for sale, what is a Christmas Tree without some presents beneath it?

Coming Events

Date	Event	Site	Contact
Jan. 17-19, 1986	NAMM Winter Market	Anaheim, CA	Bob Russell 1414 Lander Rd. Mayfield Heights, OH 44124
Feb. 21-23 1986	California State Conference	Town & Country Hotel San Diego, CA	Don Mannino 4243 Blackton Dr. La Mesa, CA 92041 (619) 461-7559
Feb. 22, 1986	Washington D.C. Seminar	Ramada Inn Beltsville, MD	Joyce Meekins 20-E Ridge Rd. Greenbelt, MD 20770 (301) 345-3555
Mar. 7-9 1986	South Central Louisiana Seminar	Regency Motor Hotel Shreveport, LA	Charles Richey 112 E. Robinson St. Shreveport, LA 71104
Mar. 13-15, 1986	Pacific Northwest Conference	Red Lion Inn Bellevue, WA	Steve Brady 22808 35th Ave. West Brier, WA 98036 (206) 543-0543 (206) 771-7781
Mar. 14-16, 1986	Central West Regional Seminar	St. Louis, MO	Rohnn Kostelecky 923 Pike St. Charles, MO 63301 (314) 946-2483
April 4-6 1986	Pennsylvania State Convention	Harrisburg, PA	James N. Hess 511 Miller Ave. Mechanicsburg, PA 17055 (717) 790-9670
April 18-20, 1986	New England Regional Seminar	The Lowell Hilton, Lowell, MA	Nancy Walker Parry 125 Hartford Street W. Natick, MA 01760 (617) 653-2747
May 10, 1986	Northern California Seminar	Davis, CA	Yvonne Ashmore 12700 LaBarr Meadows Grass Valley, CA 95949 (916) 273-8800
May 16-June 6, 1986	Study Tour of Europe	East & West Germany, Austria Czeckoslovakia	Dan Evans 4100 Beck Ave. Studio City, CA 91604 (818) 762-7544
July 21-25 1986	Piano Techicians Guild Annual Convention and Institute	Caesars Palace Las Vegas, NV	Home Office 9140 Ward Parkway Kansas City, MO 64114 (816)444-3500

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Miscellaneous

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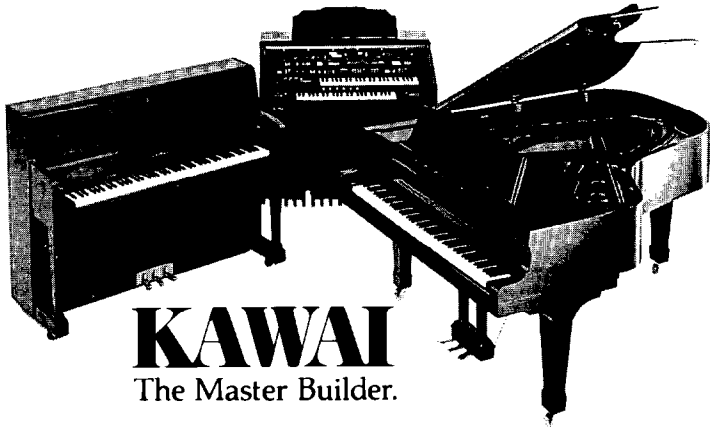

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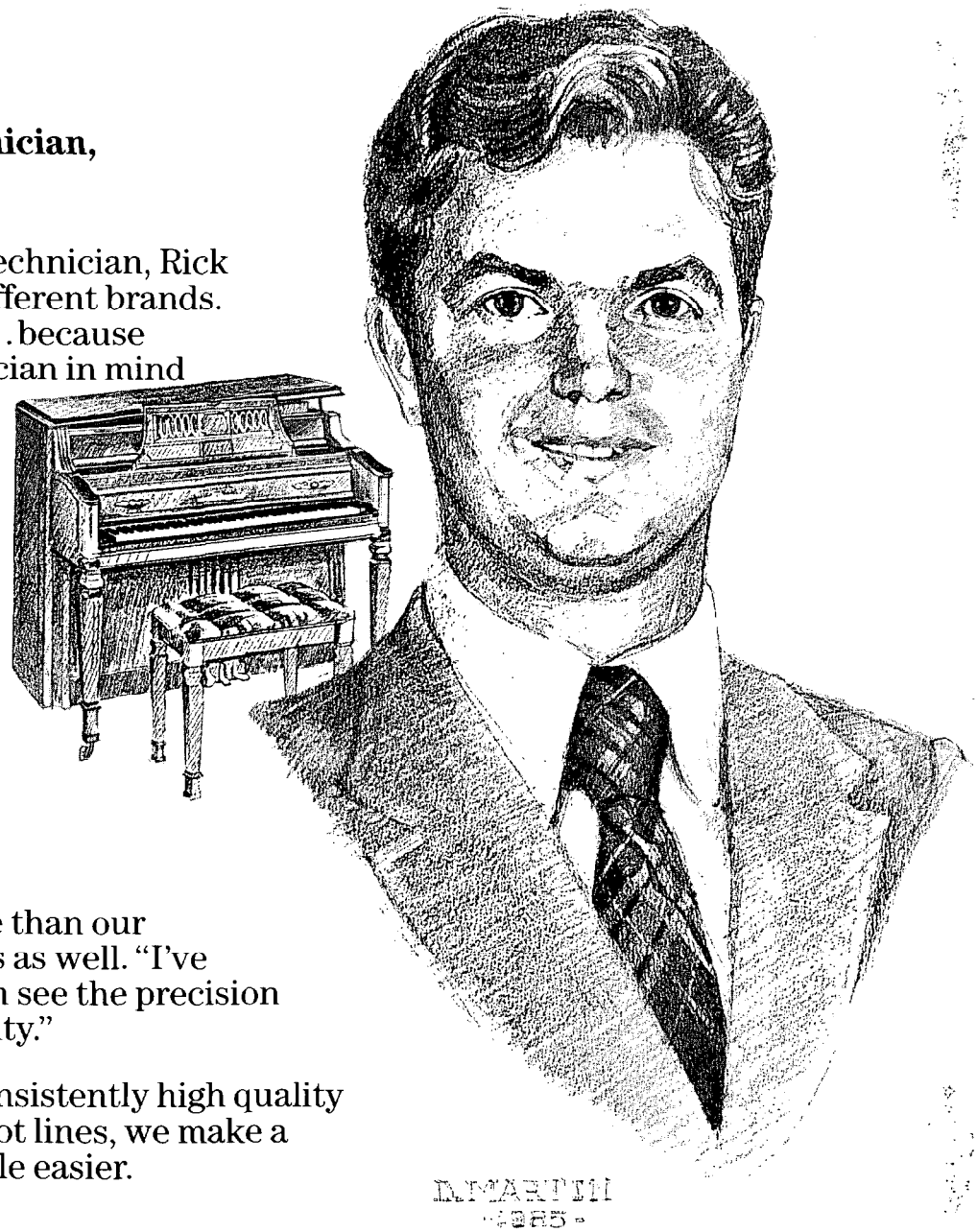

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