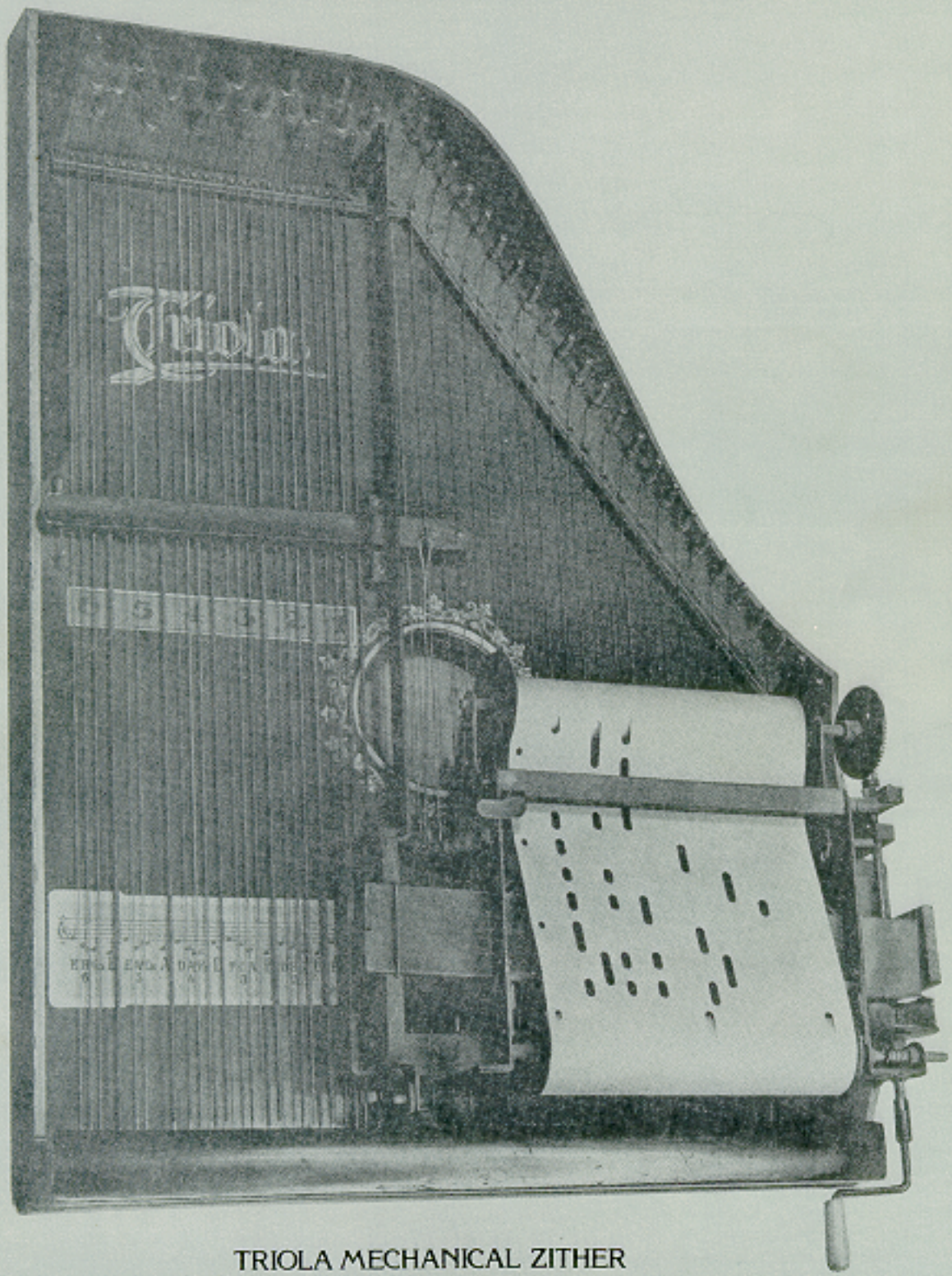
Piano Technicians Journal
January 1980



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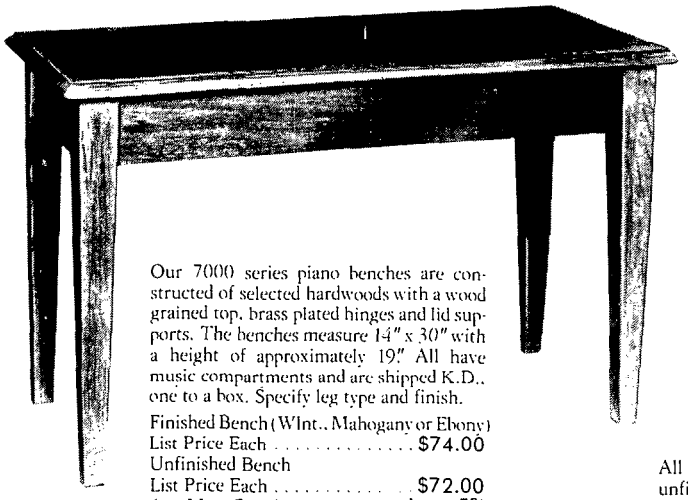

Our 7000 series piano benches are constructed of selected hardwoods with a wood grained top, brass plated hinges and lid supports. The benches measure 14" x 30" with a height of approximately 19". All have music compartments and are shipped K.D., one to a box. Specify leg type and finish.

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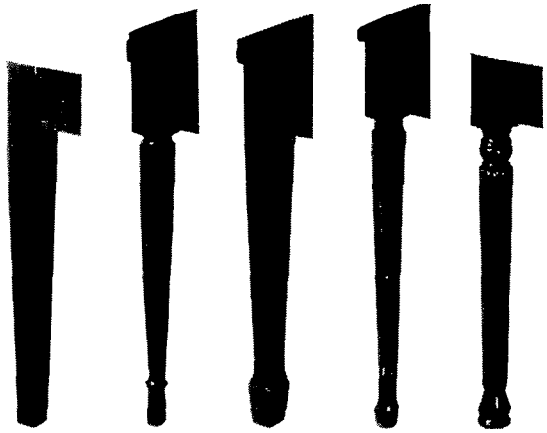
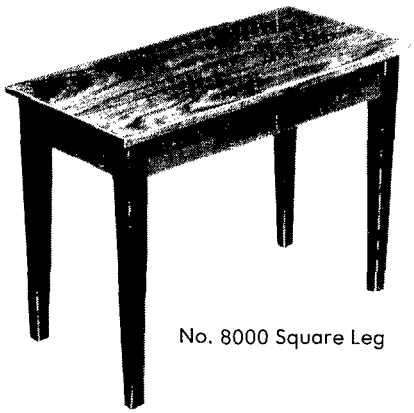


7085 Square | 7051 Round | 7086 Spade | 7050 Round Flute | 7275 Georgian

All five leg styles are available in Walnut, Mahogany and Ebony finish or unfinished. Order by using the leg number followed by the designation "W-M-E or U" for type of finish. Example: 7085W for square leg, walnut finish.

ECONOMY BENCHES



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No. 8000—Square Leg (Specify Finish).
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List Price Each $60.00
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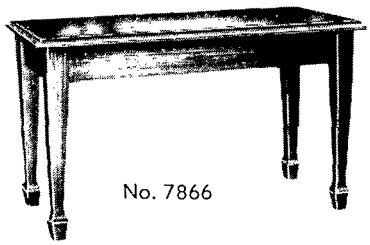

No. 7866

Primarily designed to use with grand pianos, these high quality benches have veneered tops with a hand rubbed finish of either Walnut, Mahogany or Ebony color. Also available unfinished. All music compartments are finished. Bench height is 19" top size 14½" x 35" available in spade foot or brass ferrule legs and shipped K.D.

No. 7866
Spade Foot Leg, Specify Finish (W-M or E).
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Spade Foot Leg, Unfinished.
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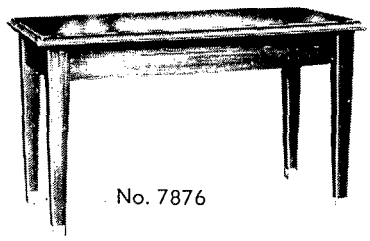

No. 7876

No. 7876
Brass Ferrule Leg, Specify Finish (W-M or E).
List Price Each $104.00
Brass Ferrule Leg, Unfinished.
List Price Each $102.00
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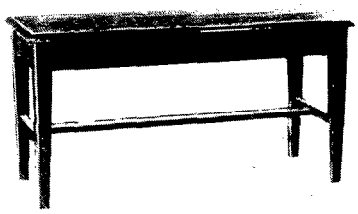

Similar specifications as the Duet Piano Bench but to further strengthen the legs for school use, a strong stretcher base is added. Comes with music compartment, 14½" x 35" top size, 19" high and three finishes, Walnut, Mahogany and Ebony as well as unfinished. Shipped set up.

No. 7022
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Unfinished Bench.
List Price Each $128.00
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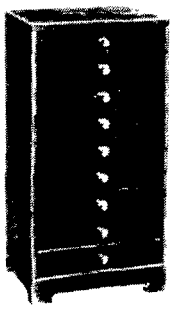

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Piano Technicians Journal

Contents

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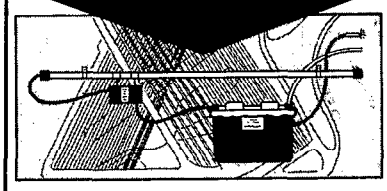

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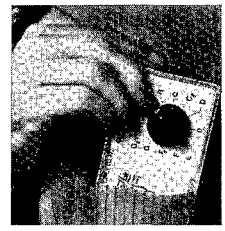

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EDITORIAL

Don L. Santy, Executive Director

It will soon be Philadelphia time! About 1,000 Guild members will be descending upon the City of Brotherly Love in July for the 23rd Annual Piano Technicians Guild Convention & Technical Institute.

Your convention committee has traveled to that great city twice, examined facilities, looked over every possibility of fun and frolic, and investigated the requirements of the institute. We have come to the conclusion that this next convention holds every possibility of being a great meeting and a fine learning experience.

The registration fee is going up slightly, just like everything else. It was nothing short of a miracle that we were able to produce an outstanding convention last year without increasing the price from the year before. In spite of inflation, many extra expenses and some big surprises, we did not lose money.

Your staff is currently putting all of the details together for Convention 1980, and Institute Director Ernie Juhn is lining up his team. **Now it's up to you!** We hope you are planning to join us this year and will ACT FAST AND REGISTER EARLY. We were able to eliminate most of the hectic problems last year because members cooperated and registered early. An early registration means that we can plan for your attendance — and it makes our jobs easier and your stay more pleasant.

The local host committee is planning an outstanding program. It will be hard to beat the splendid job of the Twin Cities Chapter in 1979, but a truly memorable experience is in the making and you will soon receive the details in the mail. I truly hope that the increased cost of traveling and accommodations in Philadelphia will not discourage members from attending.

Keep in mind that it is all relative! As costs to us increase, we must in turn place more value on our time and skill to meet these demands. Piano Technicians have only time to sell. This, accompanied with years of experience and skill, pretty well determines the amount of money it is possible for a technician to generate in any given period of time. It is imperative that some of this time be invested in upgrading individual skill and knowledge. This is where the Guild's conventions and institutes come in handy and make it an important investment in terms of professional growth and individual earning ability.□

Coming Events

January 11-12, 1980
ARIZONA STATE SEMINAR
Tempe, Arizona

Contact: Carl Bates
4112 West Caron Street
Phoenix, AZ 85021

February 18-19, 1980
CALIFORNIA STATE SEMINAR
Santa Clara, California

Contact: Bill Klein
219 E. St. John St. #3
San Jose, CA 95112

April 10-12, 1980
PACIFIC NORTHWEST
CONFERENCE CONVENTION
Vancouver, British Columbia

Contact: Al Seitz
1517 Medfra
Anchorage, AK 99501

April 11-12, 1980
NEW ENGLAND SEMINAR
West Lebanon, New Hampshire

Contact: George Wheeler
11 Cherry Hill
Springfield, VT 05156

April 18-20, 1980
PENNSYLVANIA STATE
Altoona, Pennsylvania

Contact: Fred Fornwalt
1333 Logan Blvd.
Altoona, PA 16602

April 26, 1980
LOS ANGELES ANNUAL
TECHNICAL SEMINAR
Los Angeles, California

Contact: Daniel A. Evans
4100 Beck Avenue
Studio City, CA 91604

April 29, 1980
MID-SOUTH SEMINAR
Nashville, Tennessee

Contact: Ronald Croy
3214 Jonesboro Drive
Nashville, TN 37214

May 2-4, 1980
MICHIGAN STATE CONVENTION
Southfield, Michigan

Contact: Calvin Champine
2145 Dalesford
Troy MI 48098

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PRESIDENT'S MESSAGE

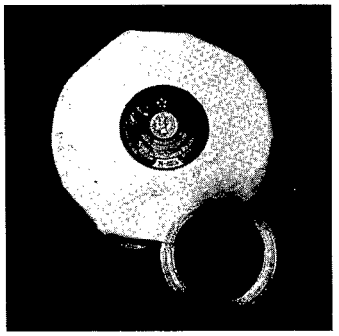
Bob Russell, President

January is the time of year when traditionally we re-evaluate ourselves and our surroundings. In past issues of The Journal we have talked about what the Piano Technicians Guild can do for us. As we examine the situation closer we might say, "What are we doing for the Guild?" The Guild depends on all of its members and potential members for growth. We need your contributions, both technically and intellectually, in order to become stronger and more meaningful.

There is one very important aspect that an organization must have in order to grow, and that is leadership. Leaders compile ideas and opinions and guide the organization in a positive path of growth. It is important that members make their ideas and opinions known to their leaders so that decisions can be made that are harmonious to everyone.

Everyone has a responsibility to discover, develop, and encourage people to climb the ladder towards good leadership. Leadership begins at the chapter level. Become involved in your chapter committees, contribute your talents to chapter officers, become a chapter officer. Expand your interests to the regional activities and national committees. Open new horizons and become involved in national board activities. This is where future leaders are usually "discovered." It is important for present leaders to give members the opportunity, help and training to be responsible, capable, and willing leaders to carry on the Guild's work.

President Kennedy said it well: "Ask not what your country can do for you, but what you can do for your country." We do know what the Piano Technicians Guild is doing for us, but are we doing our best to contribute to the Guild? Leaders, both local and national, stand up and be counted! We encourage you; the Guild needs you; we will support you.□



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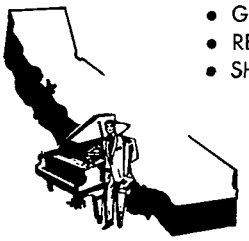

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PREVIEW: 1980 Institute

Ernest Juhn

Here is a short look into the future. In an effort to comply with everybody's wishes (which, of course, is not possible), we hope to present the best possible combination of new and repeat classes.

In addition to the regular 1½ and 3-hour classes, there will again be some special classes as well as private tutoring available. Now for some particulars as they are available at this time.

Among the new classes we will have a "hands-on" class on *Sharpening the Tools of the Trade*; one called *Rebushing Workshop* (also hands-on); a grand hammer hanging class where every participant will have a chance to "hang" some hammers; a brand new one entitled *Friction and Lubricants*; a hands-on *Grand Regulating* session; and many more.

I am planning on a complete grand rebuilding class (special) which will run during the entire institute and wind up with a completely rebuilt piano. To those who will sign up for this special class, we will have a complete schedule available so it will be possible to still participate in some other institute classes during periods which might cover subjects of lesser interest to the participant of the rebuilding class.

A modified version of the *Grand Pinblock Installation* class is scheduled for a one-day special class (repeated three times). Among the "repeat" classes we can again look forward to an excellent selection of subjects including voicing, basic tuning practices, vertical regulation and damper installation.

As can be seen from this very limited preview, there will be some fine new classes (wait till you hear about the rest of them). There will be a lot of "hands-on" sessions which was one of the requests expressed during previous institutes. In addition to the standard classes which will be repeated several times, some new subjects (and/or instructors) are being introduced. These classes will be scheduled to be given once or twice, and there is a pretty good chance of your favorite subject being represented.

Next month I will have some more information about new and old classes as well as the instructors. My intention is to have the complete institute program ready and printed long before the convention. This will give everyone a chance to plan ahead.

Until next month.□

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THE TECHNICAL FORUM

Jack Krefting,
Technical Editor

January is as good a time as any, I suppose, to look ahead. The technical content of The Journal is my primary interest in this context, and I am seeking your advice and opinions to help chart a course for the coming months. If there is a particular area of piano service that you feel is not adequately covered now, speak up. This is your magazine, and it exists to serve your needs. Even though I don't have time to personally answer every letter that comes in, you may be assured that thoughtful consideration is given to the ideas expressed in each one.

We could use one or two more regular contributors. The hours spent at the typewriter can be long, and the compensation is low; but the reward lies in the knowledge that every article meets the needs of someone, making that person a better technician. Each of us was helped along by more experienced technicians, so maybe it is time to pass some of that knowledge on to others. If you are experienced but hesitant to pose as an expert because you feel you still have more to learn, I can only say that the only people who have a chance of improving are those who recognize the need. You will learn more from teaching than from being taught, because the former requires organization of thought while the latter merely requires attendance. The best teachers, in my experience at least, are to be found among those who admit to a lack of complete knowledge. We could use a few people who don't yet know everything there is to know about pianos. If you are one of those, write an opening article and an outline for possible future articles and send it to me. Quite possibly we can work something out.

Here is an interesting letter from Salt Lake City, Utah. The writer is Steve Keen:

"As a relative newcomer to the field and to The Journal, I would like to express my appreciation for the opportunity to share with other technicians, and especially as a newcomer, for the opportunity to ask about information I lack. There seems to be a lot of divergence of opinion among technicians, each being deadset that he is 'correct.' The Journal and the Guild, I think, help to dissolve the isolation that leads to that situation and allow for open-minded discussion.

"I have noticed that there is little discussion in The Journal of the objects of the technician's art; i.e., the pianist, piano music, and music. There are may aspects of the functioning of a piano that a nonplaying technician might overlook.

"Below are several questions for your consideration:

"(1) Given a bass bridge that is cracked to the point of requiring replacement, is it advisable to loosen the strings on the entire piano in order to remove the bass strings and get at the bridge? Considering that the bass strings are stretched across their own section of the plate, is it safe to remove these alone and not risk damage to the plate?

"(2) When replacing iron-wound bass strings, do stringmakers compensate for the difference in density between copper and iron by altering the diameters or should I do this before ordering the string? What is the formula by which this is done? Same core size?

"(3) Are back issues of The Journal available? How about a master index by subject of back issues for the purpose of ordering specific reprints?"

To answer the last question first, a master index has indeed been prepared and should be available from our home office within the next 30 days. It was finished by early 1979, but discussions over the format, proofreading the volumes of materials, and other publication details have occasioned some delay in its release. Some recent back issues of The Journal are available for sale at our home office in Seattle.

The first question referred to the advisability of loosening all strings when removing bass strings for bass bridge repair. Although there is arguably a significant tensile change when bass strings are removed without lowering tension elsewhere, I have never heard of a plate breaking for this reason. I have done it many times myself with no mishaps. Naturally, the change in downbearing on the board will necessitate extra tuning of the entire instrument after the strings are replaced; but this would also be the case if the entire scale were relaxed, so I see no particular point in lowering everything unless the structure is already suspect. When new pianos are chipped, tension is added suddenly and unequally. In many factories the chippers are instructed to start with the first string in the bass and proceed on up to the top treble, putting full tension on each string as they go. If a plate can withstand that, it can withstand the removal and replacement of bass strings without wholesale lowering of tension.

The second question is much tougher to answer. String makers do not ordinarily compensate for the difference in mass between iron- or steel-wound strings and copper-wound ones; if the technician wants to duplicate the original scaling using copper, he would be well advised to furnish the string maker with critical dimensions. Not knowing the conversion formula, I went to Baldwin Research Engineer Harold Conklin, hoping for a simple answer. He had the answer, but it wasn't simple at all, at least not to me. I believe the answer will require a separate article, and if there is enough interest among our readership I will ask him if he would consider writing it all down for us. Let me know if you would like to read such an article.

PLATE NOMENCLATURE QUIZ

Figure 1 shows a grand piano plate, with arrows indicating some of the features which have specific names. Get out your pencil and see how well you can do. The answers will be found on another page in this issue.

READER FEEDBACK

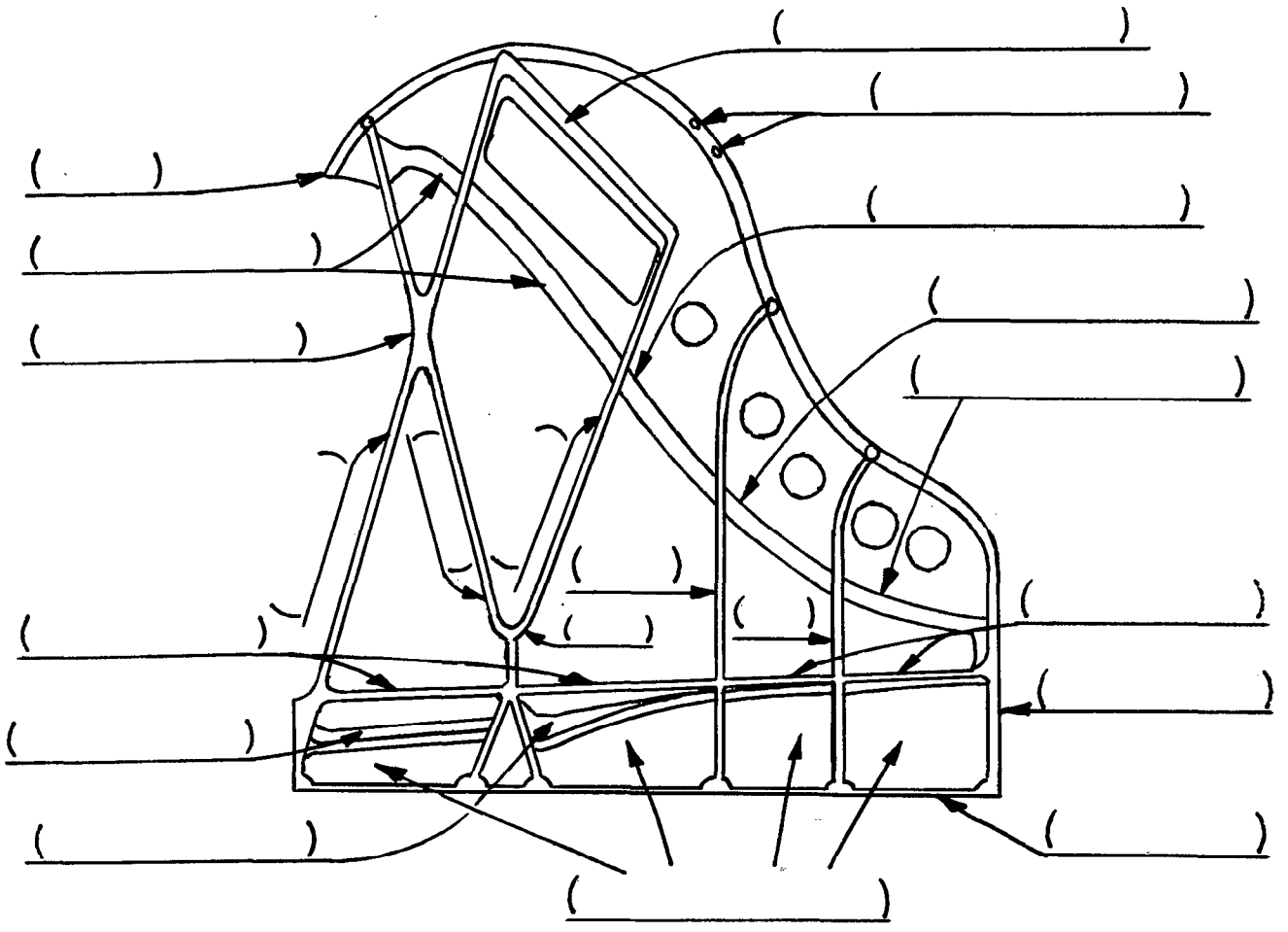
In our September issue, James I. McVay wrote about some bridge repairs that he had done with the help of Gerry Caunter. When he saw his letter in print and read my answering comments, he felt some clarification was in order. I had stated that any time a technician makes more than one change in an instrument at one time he can never be sure which change was primarily responsible for the resulting difference in performance. Here is McVay's most recent letter:

"I'm afraid my letter of June 26, 1979, to you was ambiguous in one respect. When I said, 'the pianos were then restrung,' I should have said, 'the strings were then replaced on the hitch pins.'

"The strings were **not** *changed. The improvement, which was rather spectacular, was entirely due to the bridge treatment.*

"As I worked too long as an engineer to not be cognizant of the scientific method, these jobs were especially gratifying to me. Over the past 15 or more years I have rebuilt many pianos using this procedure on the bridges. I felt I knew that it gave a much

FIGURE #1



cleaner sound but these jobs proved it. Experiment proved that two types of false beats were present: those caused by loose pins and those caused by the need of renotching. Usually both were present in the same string. The bad notching produces a slower false beat but adds a 'fuzziness' that is quite objectionable.

"I have heard many craftsmen say, and it has been stated in The Journal, that many pianos 60 years old or older, upon being rebuilt, are a disappointment. I believe that in many cases this is due to not resurfacing and renotching the bridge and assuring absolutely tight bridge pins.

"I contend that any old piano, and many not so old, need to have this job done and will not achieve their potential without it.

"You can almost always determine whether or not the bridge pin is the cause of false beats by a gentle pressure of a large heavy screwdriver or metal rod against the pin.

"A bridge needs to be resurfaced and renotched when the string has sunk into the wood far enough to move the point where the string leaves the wood away from the point where the string leaves the pin. As the plane of vibration rotates, the effective length of the string changes. This, of course, also causes a false beat and usually, as previously stated, a 'fuzziness.'"

——James I. McVay

Our next letter is from James F. Ellis of Powell, Tennessee. Ellis wrote an excellent article on early piano actions several months ago, and wishes to take exception to Peter Redstone's response in our September issue. Here is the text of Ellis' rebuttal.

"In a recent article (Journal, June 1979), I compared an escapementless Prellmechanik to 'a very poorly-regulated modern action having a shallow dip, lost motion, and completely missing letoff.' In his letter to the Forum (Journal, September 1979, p. 13), Peter Redstone said that my illustration was 'grossly untrue.' I regret that my reply must appear late, due to the time lag involved in printing and distributing The Journal.

"Mr. Redstone is correct about the light hammers, thin strings, and low tension of the eighteenth-century piano. There is/was indeed less momentum in proportion to the total energy absorption than would be the case in my illustration; therefore, the hammer bounce in my illustration would be exaggerated.

"There is another inaccuracy in my illustration, which Mr. Redstone did not mention. This is the fact that the key travel in a Prellmechanik was usually limited by a stop at the rear, but the stop in a modern action is at the front rail. Therefore, in my illustration, the key and balance rail would act as a springboard for the rebounding hammer, further exaggerating the bounce. Nevertheless, for someone who has never seen an escapementless Prellmechanik, my illustration provides a good example of what the problem was, and why Stein decided to correct it with his escapement.

"I accept Mr. Redstone's word that it is possible to clad the Prelleiste with sufficient material to damp out the rebound. But when this is done, it also tends to damp the forward thrust to the hammer, and this reduces the dynamic range of the action. Moreover, the escapementless actions of the eighteenth century did indeed have problems with rebounding, 'bubbling,' and the occasional skipping of tones, and I again refer to Mozart's letter of October 1777 as proof. My illustration may be exaggerated, but to say it is 'grossly untrue' is going too far.

"Mr. Redstone may know two pianists who prefer escapementless actions, but there are many more who do not. The field of music is filled with differing opinions, but the consensus of opinion is that the escapementless designs are deficient, and they have been abandoned by the industry in general for more than a century. Beyond this point, I do not wish to argue. If Mr. Redstone thinks I have any contemptuous attitude toward any of these instruments, then he is mistaken. They, and their makers, all have their places in history, and I prefer to consider the facts for what they are. Also, I am glad there are people with the required skill who will take the time and effort to restore those that still exist.

"Lastly, Dolge was just one of several references I quoted. The comparison in question was mine, not that of Dolge. The concluding statement in the September 1979 issue of the Forum that reads, 'Quoting Dolge as an authority on pianos is like quoting an Amish housewife as an authority on atomic energy,' is, in my opinion, the kind of inappropriate remark The Journal would do well to omit."

——James F. Ellis

EXTRACTING BROKEN TUNING PINS

Now and then the question of broken pin extraction is raised, so we might consider some techniques here.

We hear stories of how technicians hammer broken pins back up and out from the bottom on grand pianos, but I have to say that this method has never worked for me. The keybed is in the way of a good hammer swing, and even if the drift punch is just the right length (short enough to allow some hammer swing, but long enough to hold in position) the idea doesn't work out well in practice. It would work fine in a loose block, but unfortunately, tuning pins only break in very tight blocks.

If the pin breaks at the becket hole as usual, the easiest method of removal involves the use of a T-handled extractor (**see Figure 2**). This tool has reverse threads in a tapered aperture. The threads are hardened and will cut into the tuning pin, tightening more and more as the tool is turned counter-clockwise. Turn the pin out slowly to minimize damage to the block that would be caused by excessive heat.

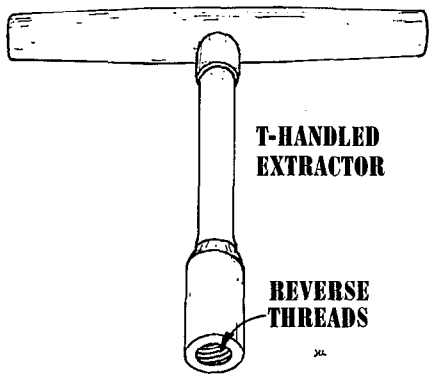


FIGURE #2

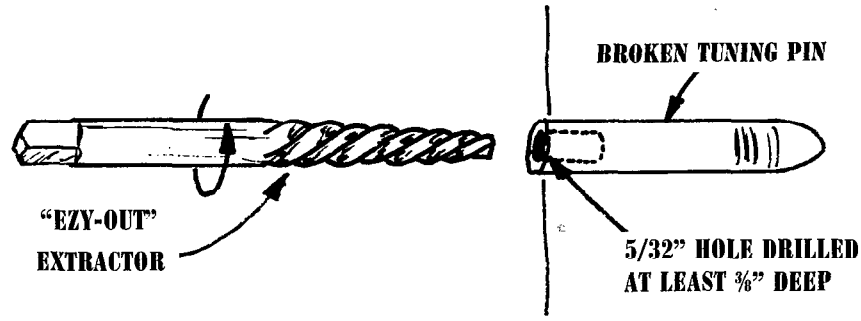


FIGURE #4

Some supply houses sell an extractor head with a tapered end that will fit the star tip of a tuning hammer (**see Figure 3**). This works almost as well as the T-handled extractor and takes up less room in the tool case. It has a tendency to slip rather than grip, though, because of the unequal pressure exerted by the tuning hammer; care is necessary to keep the tool straight when it starts cutting into the tuning pin.

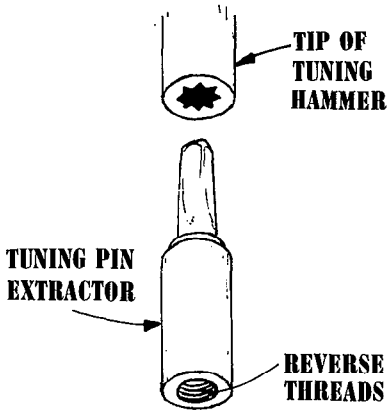


FIGURE #3

There are instances when neither of the above tools will do the job, either because of a lack of working clearance or because the pin broke below the becket hole. If the piano is an upright, the pin must be removed with a tapered helical extractor, commonly known by the trade name "Ezy-Out." Mine is made by the Cleveland Twist Drill Co., and the proper size for tuning pins is a No. 3. First, drill a 5/32" hole into the center of the broken pin, using a center punch to start the drill bit. It is important that the hole be as nearly centered as possible, and it is absolutely vital that it be drilled deep enough that the extractor cannot bottom out in the hole (**see Figure 4**). An extractor of this type will penetrate slightly more than ¼" into the hole before it starts to grip, so make sure the hole is at least ⅜" deep.

Figure 5 illustrates, in exaggerated form, what happens when an extractor is used in a hole drilled off center. The extractor works twice as hard and is only half as effective, because

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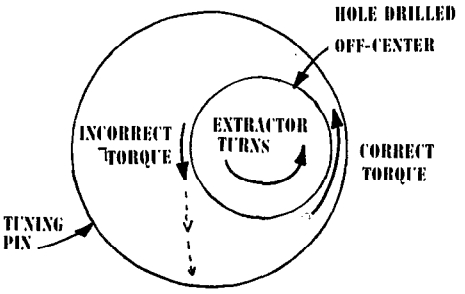

FIGURE #5

it is working against itself. In such cases, the technician applies more and more torque and may break the extractor in the tuning pin. This is a disaster of the first magnitude in a vertical piano, because the broken pin cannot be driven out and the hardened piece of broken extractor cannot be drilled out. The extractor works beautifully if the rules of craftsmanship are followed:

1. Prick punch a dimple as close as possible to the center of the pin.
2. Buy a new, sharp high-speed drill bit for this purpose, and don't bend the bit while drilling; a drill bit broken off in the pin is no easier to remove than a broken extractor, which is like saying it can't be done without using dynamite.
3. Drill a 5/32" hole at least ⅜" deep, insert the extractor and back the pin out.
4. Install an oversize pin in its place.

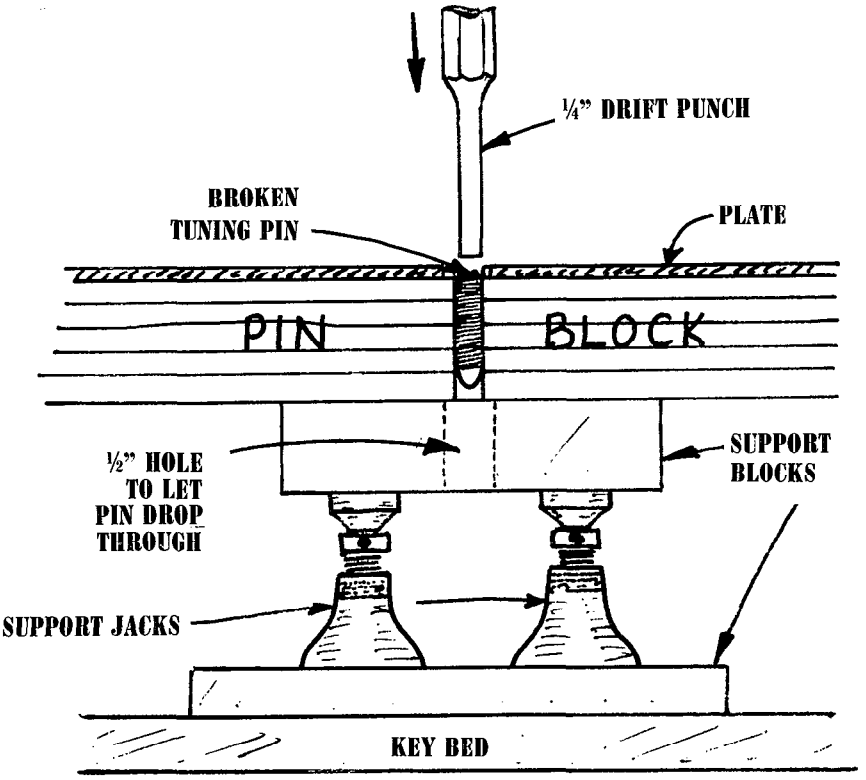

FIGURE #6

In a grand piano, assuming the block is drilled all the way through, it is possible to drive the broken pin out the bottom of the block. If this method is selected, the technician must be sure to support the block firmly around the hole in question (**see Figure 6**) and always use a ¼" drift punch, never a tapered punch. Lacking that, the technician could use another tuning pin as a punch (**see Figure 7**). If the new pin being used as a punch happens to be the correct oversize for proper torque in the block, it can be left in place when the broken pin pops out.

Given a choice, I would prefer to extract a broken pin rather than drive it out, because I feel this is somewhat less abusive to the block. We don't always have a wide range of options, though, and making the repair in the field is always more difficult than talking about it; the technician will have to judge each situation individually.

MAINTAINING THE GRAND HAMMERLINE

QUESTION: *"... in regulating a grand piano, I have found that if I lower the hammer rest rail below the level of the shanks as the manual instructs, the hammers will not stay level with each other. I have adjusted the capstans several times and each time the hammers are perfectly level, but after playing the piano the hammerline returns to its old unevenness. I asked two other technicians about this and got two different answers. What do you think the problem is?"*

ANSWER: The first thing I would check would be the repetition springs. If they are too weak or are binding in their grooves, the repetition levers will not lift the hammers reliably back to rest position. Next, check the height of the jack in relation to the cradle. The jack tops

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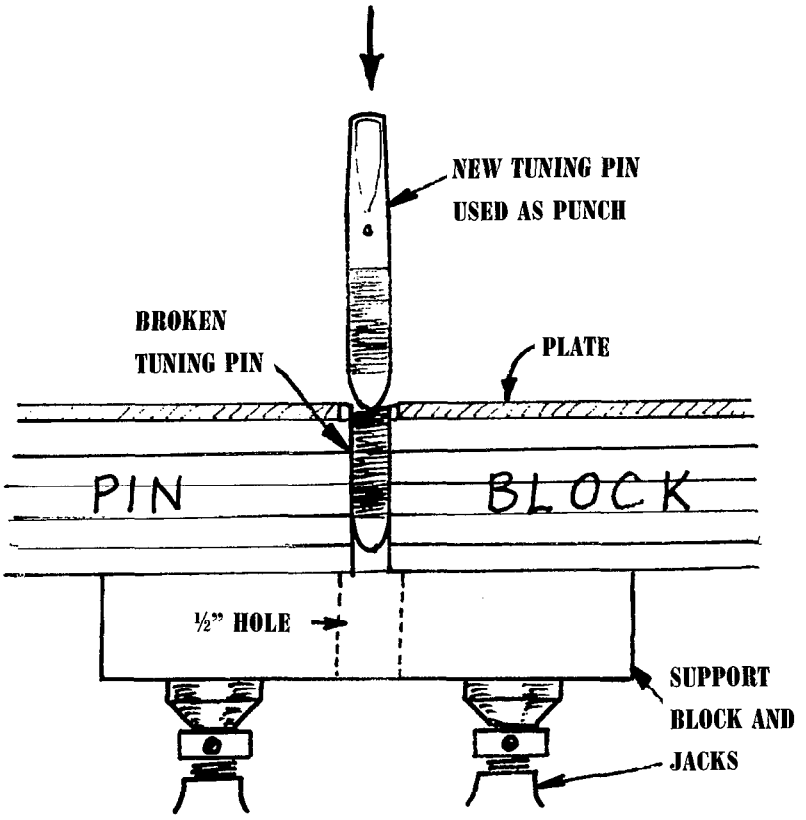


FIGURE #7

should be just slightly below the cradles, not enough to be able to see but enough to feel with a fingertip. Correctly regulated, the jack should return all the way to its stop every time the key is released, without dragging on the knuckle. The repetition spring must be strong enough to lift the knuckle clear of the jack, otherwise power and repetition will suffer.

Since the capstans were regulated more than once, the unevenness of the hammerline must be considered a symptom of another problem, rather than thinking of it simply as a problem in itself. Perhaps there is some physical interference between moving parts that aren't supposed to touch one another. The side of the knuckle could be touching its neighbor, or the hammer could be brushing an adjacent hammer. Keys could be rubbing or binding, or a glob of glue on the hammer tail could be catching on a whippen flange screw. Conceivably there could be chips of wood or other foreign matter bouncing around on the backrail cloth. The key here would be whether the keys always return to a level rest position.

Assuming that the springs are sufficiently strong and there is no physical interference between adjacent parts, the problem can most likely be traced to excessive friction. This could be in the keyboard or in the contacting profiles (a burred capstan would do it) but is more likely in the whippen support flange center. Hold the backs of the keys down, raise the hammers to a vertical position, and flick the whippens upward. If they don't fall quickly and freely of their own weight, they are too tight.

The hammer rest rail is unfortunately named, implying a function that it does not perform. The modern grand action is so designed that the shanks are suspended above the "rest rail," poised to respond instantly. Any attempt to maintain a level hammerline by raising the rest rail is a contravention of the design. It is an example of curing the symptom rather than the disease, not unlike the quack doctor who would cure smallpox by applying heavy makeup, or the sinking sailor who keeps bailing water without plugging the hole in his boat.

Our anonymous correspondent indicates that he is regulating the action, and we would be interested in a follow-up report on the hammerline after the complete regulation has been performed.

RIB STRENGTH

QUESTION: *"... I have always thought that ribs should be notched into the liner for adequate strength, and now we see more and more vertical pianos with short ribs. Other than economy, is there any justification for ribs that don't extend all the way to the edge of the soundboard and into the liner?"*

ANSWER: Rib dimensions are part of the scaling of the piano, and since they are glued to the soundboard they really should be considered as a part of the board rather than as individual pieces. If we are just talking about strength, we might get away with a generalization to the effect that the longer the rib, the better; even that statement is suspect when one considers that some boards are stiffer than others, and ribs may have different cross-sectional areas in a particular scale. Laminated boards may well be stiffer than plank boards, at least across the grain, and laminated boards cannot very well be thinned at the edges like plank boards.

If I decide to do it, I can make the strongest soundboard in the world. I could use maple two-by-fours for ribs, and a very thick hardwood soundboard. It would be the strongest board in the industry. It wouldn't be any good, of course, because it wouldn't have any flexibility; but if strength were the only criterion, I could build a board that would outlast the piano ten times over.

I am not prepared to say just how long a rib should be, because too many other factors are involved. If a soundboard caves in at the edges, then we

might say that the ribs were not long enough; if the board does not respond, then maybe there is too much stiffness built into the assembly. Ultimately, the test of a soundboard is how it sounds. We would naturally expect it to be strong enough to withstand the force of downbearing, which might amount to as much as a ton, and we certainly expect it to last more than a few years; but if it is so strong that it doesn't speak, what good is it?

In addition to strengthening the board and maintaining its crown, the ribs have an important function in sound distribution. Sound travels very fast along the grain, but relatively slowly across the grain of the board. Since the grain of the ribs is roughly perpendicular to that of the soundboard, the ribs pick up the vibrations in the vicinity of the bridge and transmit them quickly to other areas of the board. Whether this could be used as an argument for longer ribs is debatable, since the area next to the liner is relatively dead anyway. The feathering of the ends of the ribs will vary from scale to scale, representing a compromise of sorts, and this makes length comparisons even less meaningful in absolute terms.

If a piano designer used short ribs simply to save a few cents on each piano, he will undoubtedly have made other concessions as well, and the piano probably won't sound good. But if the piano sings, year after year, the soundboard assembly was well-designed and constructed regardless of rib length. If interest warrants, we will discuss the relative merits of laminated soundboards in another issue.

BALANCE RAIL PINS

A student member in Johnsonville, New York, has the following contribution to make:

"... Recently I refelted the keyframe in ... (an old) ... upright. There was lots of pungent mouse dirt and little felt. The balance pins were a rusty mess. Steel wool removed most of the rust, but the pins were left badly pitted, and some were actually reduced in diameter. The key bushings are in need of replacement. The owner is contemplating this, along with a replacement set of balance pins.

"Would you suggest a method of doing this which would not scratch the new pins during installation? Do you think the odor of the mouse dirt had anything to do with the extreme rusted condition of the pins? Also, what is your opinion of using steel wool for cleaning balance pins, as opposed to a polishing compound? ..."

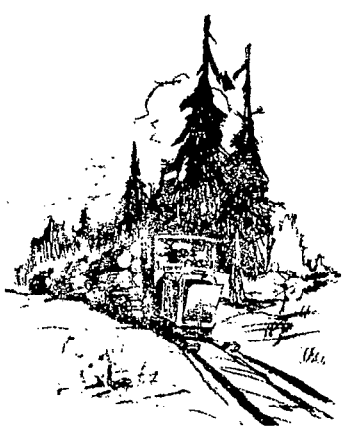
——Lance P. Reed

I would suggest making a thorough evaluation of the piano to determine whether it is worth salvaging. It will do no good to replace the key bushings if the keypins are pitted, because the new bushings will quickly wear out when rubbing against a rough surface. If the rest of the piano is as bad as the keyboard, it isn't worth saving. On the other hand, since Mr. Reed has already refelted the keyframe, it should be safe to assume that the keyboard is the only really deplorable part of the piano, and everything else is in relatively good condition. Either that, or the instrument has great sentimental value, in which case the usual rules of economics do not apply.

I do not know whether the odor of mouse "dirt" would have any effect on the plating of the pins, nor am I aware of any particular propensity of mice to think of balance pins as a dog might think of a fire hydrant. Be that as it may, the situation would seem to require a new set of keypins and key bushings, at the very least.

New keypins may be installed without fear of scratching them, as only the fingers will touch their sides. They are simply driven in with a hammer, and the job requires even less skill than that needed to drive a nail, because in this case the hole is already there. Tap them in to the proper depth and bend them as necessary after the keys are installed.

The last part of the question deals with polishing of the keypins, and here we get into controversy. The purists will say that



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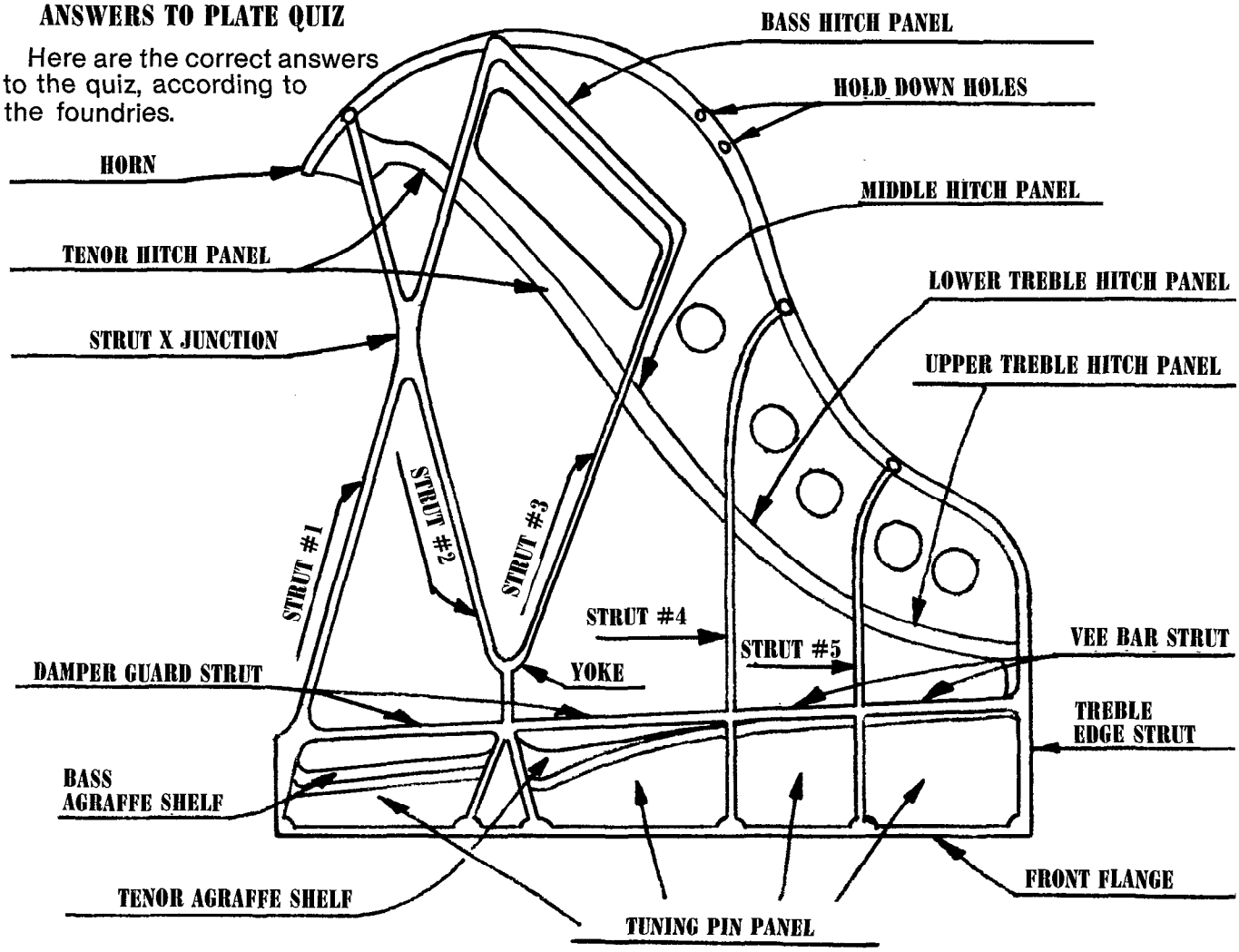
ANSWERS TO PLATE QUIZ

Here are the correct answers to the quiz, according to the foundries.



only the finest polishing compound may be used on keypins, while their counterparts say that steel wool is fine for the job. I would say that in this particular case you could have used a lawnmower and it wouldn't have made any difference, because the pins were shot anyway.

Keypins are made of soft metal, similar to that used to make common nails, so that they may be bent readily for purposes of key alignment. The main difference between nails and keypins is that the latter are more carefully dimensioned, and then plated for smoothness. As long as the plating remains clean and uncorroded, little bushing wear is likely to occur. Once the plating is scratched or scarred, the scars act like tiny knives against the key bushings. If the plating is scratched through, the pin must be replaced.

Assuming that the pins were merely corroded or dirty, we are faced with the necessity of abrading the surface to clean it, while keeping it from becoming scratched during the abrasion. It follows that the finest abrasive will be the least damaging to the surface, but also the most time consuming. Sometimes we must make a choice between getting a job done quickly and doing the best job we can. If steel wool is used, it should be no coarser than 4/0, and all remaining particles of steel should be cleaned off the pins before the keys are installed.

Although the public seems to believe that moths are the worst destroyers of piano felt, the fact is that mice pose a far greater threat. A family of mice can strip a set of dampers, butt felts and keyframe punchings in a short period of time. They use the wool to make their nests, usually under the keys but occasionally on the bottom board or behind the keyblocks. If infestation is suspected, remove all keys and thoroughly clean the inside of the piano. Look for openings where they might have gotten in, especially around the bottom of vertical pianos. An average-sized mouse can squeeze his way through a surprisingly small hole, so try to block these openings somehow. A favorite entrance is under the pedals, which can be blocked with a bunch of coarse steel wool without affecting the use of the pedals.

TIP OF THE MONTH

Our old friend Larry Scheer of Philadelphia has still another bright idea to share, this time involving the use of white liquid typewriter correction fluid. This

is available at stationery stores under trade names like "Mistake Out" or "Liquid Paper."

Scheer suggests three uses for this fluid, which is packaged in small bottles with brush caps for easy application:

1. Brush it on the tips of black rubber mutes for easier visibility when the lighting is poor.
2. Use it instead of chalk to mark loose tuning pins for replacement, because it will stay on the pin much better than chalk.
3. If your vision is less than perfect, a dab of the white fluid around the becket hole will make string replacement easier.

TOOL SOURCES

A New Jersey reader has this to say:

"While I enjoy reading your Forum, I find it frustrating when you refer to some tool and then don't indicate where it can be bought. In particular, I have in mind the 'zapper,' which I've seen mentioned twice so far in your column. The August 1979 issue refers to it on pg. 13 as the tool to heat a centerpin and burn out some of the bushing ...

"The point of this letter: Please mention the source from which devices can be obtained, particularly when it is something which is not in the standard suppliers' catalogs. I have four, and none mentions any zapper ..."

——Waldemar Dabrowski

I'm sorry about that, I thought I had mentioned that Francis Mehaffey makes such a device. I believe it's available through Pacific Piano Supply of North Hollywood, California. But the criticism is a point well taken; few things are more maddening than reading about something of interest only to be left hanging because the author left out a key bit of information. That's a little like seeing an advertisement for a mint-condition Steinway for $200 to the first taker, only the phone number is partly missing from the ad because the newspaper is torn.

Ben McKlveen is writing up a set of instructions on how to make your own zapper, so our readers will soon have the option of buying one or making one. The name "zapper," incidentally, is one that was coined here in Cincinnati when we saw how it worked because we didn't know what else to call it. It might be called the Bi-Digital Thermoneal Transformerized Facilitator, for all we know. Ask Mehaffey.

That's all for the Forum this month. Remember, we are always in need of technical articles, tips, comments and questions. Don't let us down, please, because we need your help. Thanks!□

Readers may contribute material to the Technicians Forum by writing Jack Krefting, Technical Editor, 6034 Hamilton Avenue, Cincinnati, Ohio 45224.

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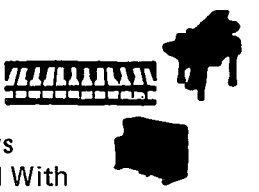

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The Piano's Century of Progress: 1770's-1870's

Jack Greenfield

(Part Two of a series of articles on the history of piano actions.)

Introduction

During the 1770's the piano was gaining wider acceptance by composers and musicians, and harpsichords and clavichords were on their way to obsolescence. The rise of the piano to popularity had started slowly. From the time of his invention just before 1700, until shortly before he died in 1731, Bartolomeo Cristofori was the only maker of these instruments. Gottfried Silbermann then began to build pianos in Germany, following Cristofori's design. C. E. Frederici, a pupil and his successor as the leading piano maker in Germany when Silbermann died in 1754, continued with Cristofori-Silbermann principles.

By now, other instrument makers had become interested and began to build pianos, some also after training by Silbermann. There were builders in the Saxony region where Silbermann's shop was located. Another group of builders in the Bavarian region used an entirely different type of action which became known as the German and then the Viennese action after improvement by Andreas Stein.

By the 1760's, about a dozen German instrument makers migrated to England. One of them, Johann Zumpe, a Silbermann pupil, had great commercial success with a cheaply made square piano with a simplified Cristofori type action he designed. Zumpe's piano was copied in the 1770's by builders of the first pianos in France and in America. In Italy, the land of its invention, piano making ended when Cristofori died.

Use of the Stein Action in German And Viennese Pianos

The work of the Stein family was an important factor which influenced Mozart and other prominent composers to accept the piano. Andreas Stein, who opened his shop in Augsberg in 1750, improved the primitive Bavarian action and his pianos gained wide popularity after Mozart wrote an enthusiastic letter of endorsement in 1777.[1] Stein taught his children, Nanette and Mathaus Andreas, his craft. After Stein died in 1793, Nanette married a musician, Johann Andreas Streicher, and the couple and the rest of the Stein family moved to Vienna to open a shop there.[2]

After working together until 1802, Nanette and her brother dissolved their partnership to set up separate businesses. Both prospered, Nanette's firm becoming one of the leading makers of pianos in the Germanies — then divided under several different rulers. Nanette was a highly competent technician and also a good business woman. She moved in important social circles and had personal friendships with Mozart, Beethoven and other prominent musical figures.

Unfortunately for the Steins, it was not possible to get patent protection for Andreas' work. Other piano makers in Germany and Vienna began copying Stein's action and it became known as the German action, and then the Viennese action. This action remained in general use in instruments made here until the 1830's.

John Broadwood and The Start of the English Piano Industry

Interest in the piano spread soon after its introduction in England. J. C. Bach, Johann Sebastian's youngest son, had moved to London in 1762. He came to prefer the piano over the harpsichord and in 1768 played a Zumpe square piano for the first piano recital in England.[3]

London was a center for harpsichord builders. To meet the piano's challenge, some developed improvements in harpsichord design, others turned to making pianos also. Burkhardt Shudi, a Swiss immigrant, had become one of London's most successful harpsichord builders. On reaching England, Zumpe worked for Shudi for several years before starting his own business. The man who led Shudi's firm to change to pianos was John Broadwood. Broadwood, at the age of 29, after arriving from Scotland,

started working for Shudi in 1761. He showed great creative skill. He married Shudi's daughter Barbara and became a partner in 1770, and sole owner after Shudi died in 1773.[4]

John Broadwood had excellent talents in the skills needed for success — technology, production, sales and business management. He ranks as one of the great figures of piano history for originating major advances in design and production.[5] He led his firm to attain a position of eminence and prestige it still retains. Some of his achievements were:

1777: English grand action developed by Americus Backers with assistance from Robert Stodart and Broadwood patented. The new action, an improvement of the Cristofori action was simpler, controlled oscillations of rebounding hammers better, and had a screw adjustment for precise control of escapement. The patent description was the first use of the term "grand" to describe a wing-shaped large piano.

1783: Introduced the sustaining pedal to replace the knee-lever used before.

1788: Divided the soundboard bridge, previously one continuous length; the separate bass bridge made it possible to use thicker strings under higher tension and to reposition the hammer strike line to obtain a more sonorous tone.

1794: Extended the keyboard to six octaves.

Broadwood revolutionized piano production. He adopted the manufacturing methods of the Industrial Revolution then taking place in other industries in England and changed from a "craftsman-workshop" operation to the modern concept of factory production. Comparing output, the early Shudi partnership averaged only 19 harpsichords annually. Under Broadwood's direction the firm became the world's largest and produced 7,000 square and 1,000 grand pianos between 1782 and 1802. When John Broadwood died in 1812, his son, James, assumed direction. By 1826, total production had reached 45,000 pianos. In contrast, Nanette Stein Streichers' firm, then one of the foremost in Vienna, had an annual output of about 50 in 1816.

At the start of 1800's at least 30 other piano makers had been established and were doing business in England.

Comparison of English And Viennese Grand Pianos

The differences in Viennese and English pianos resulted in the development of two entirely different styles of piano composition and technique. The piano music of Mozart, Haydn, and Hummel was written for the Viennese piano, which had rapid response to a light touch. Clementi's later music was influenced by the English piano which had a fuller sound but was slower and required a heavier touch. Some important design differences[6] were:

1. Wire size: English wire was about 50% larger in diameter.
2. Number of wires: English — 3 per note; Viennese — 2 for most notes, a few treble notes had 3.
3. In English instruments the case bore most of the string tension; in Viennese pianos the case was only decorative, tension was born by a solid base and a system of braces.
4. Hammers and touch: English pianos had heavier and slower moving hammers; Viennese touch weight was about 28 grams, dip was ¼".
5. Dampers: English dampers rested lightly on the strings; the Viennese dampers were more efficient weighted wedges.
6. Soundboard: English—slight crown, Viennese—flat.

Development of the Erard Action and French Pianos[7]

In 1716, a Frenchman, Jean Marius, designed and built models of a hammer harpsichord, but piano making did not start in France until about 60 years later. One of the first builders of pianos and one of the greatest French instrument makers, Sebastian Erard, started his career at the age of 16 as an apprentice to a harpsichord builder in 1768. After arriving in Paris from Strasbourg, he dropped the *h* from his original name, Erhard. He soon acquired a reputation for outstanding work. In 1777, he built his first piano, working in a shop supplied by the Duchess of Villerol, a great patroness of art. He continued to build instruments ordered by other members of the aristocracy. In 1785 he started his own shop with assistance from his brother, Jean Baptiste.

He became an expert on organs and harps also and devised the mechanism which is the basis of modern harp construction. When the "luthiers" guild of Paris complained of his competition, Erard's influential friends arranged for the King to issue a special charter allowing Erard to operate independently of any craft association.

The Erards started building grand pianos soon after Sebastian returned from England in 1796, after a stay of seven years in which he learned English piano making and established an Erard branch in 1792. Erard grand pianos rapidly acquired popularity among concert pianists.

It took many years of work to perfect the repetition action Erard is famous for. An early design was patented in 1808, the same year Erard also patented the agraffe. The improved design patented in England in 1821, used in some Erard grand pianos, received only limited acceptance because it was too complicated. It was subject to breakage and developed noisiness after use. The Erards continued their work to improve the design. Finally, after additional modifications by Henri Herz, also another French piano maker with a background as a concert pianist, the design was simplified and early problems were eliminated. The superiority of the Herz-Erard action led to its acceptance by other leading piano makers and concert pianists. Without this action, the art of pianoforte playing could not have attained the state of perfection to which it has now arisen.[8]

Another French piano manufacturer, the firm founded by Ignaz Pleyel in 1807 and later Erard's

leading competitor, also adopted the new action. By the mid-1800's Erard and Pleyel grand pianos were considered the finest from an artistic standpoint and were favored by many of the concert artists on the continent. Henri Pape, another influential French piano maker, and a prolific inventor, made instruments with a pleasing but less powerful tone. Pape's grand pianos were used much less for concert work.

The old style actions lingered for longer than would be expected after the Herz-Erard action appeared. Pianos with the Viennese action were made as late as the early 1900's.[9] Cheap grand pianos with the single escapement English grand action were made as late as the 1950's.[10]

Beethoven's Influence on Piano Development[11]

The pianist and composer whose work had the most influence in pushing the development of the piano was Beethoven (1770-1827). Before, Beethoven Mozart (1756-91) and their contemporaries wrote music suitable for the keyboard instruments available to them. Later, by the time Liszt (1811-86)started his career, the Erard action had been introduced and other design changes to modernize the instrument had been initiated. Beethoven's early sonatas could be played on either harpsichords or pianos. His Sonatas Opus 14, Nos. 1 and 2 (1799) were his first specifically for piano. By then, the Viennese pianos were inadequate for his playing. He expressed his dissatisfaction in a letter in 1796 to Johann Andreas Streicher, Nanette Stein Streicher's husband. In 1803, Beethoven received an Erard piano. It failed to withstand Beethoven's treatment of it. In 1818, John Broadwood sent him a piano which proved no more durable than any of the others Beethoven worked on.

Pianos to cope with the challenge of Beethoven's last sonatas were not developed until years after his death. Beethoven's composition and forceful playing subjected the thin, weak strings of contemporary pianos to more strain than they could withstand. This created the need for strengthening the piano structure for use of thicker strings, which would be stronger but would require higher tension. Also adding to the total strain was the tension of additional notes by extension of the keyboard and the gradual raising of pitch to which pianos and other instruments were tuned.

Composite Piano Frames[12]

Until this time, manufacturers had had an aversion to using any metal parts in piano construction for fear of adverse effects on tone quality. Now it was evident that all-wood frame construction could not provide sufficient strength, piano makers would have to consider reinforcement with metal parts. As early as 1788, one English firm had tried metal struts and tubes. By the early 1800's other European firms undertook the study of making a more sturdy instrument. Experiments were conducted with frames, bracing, and tension rods, consisting of tubing or solid bars of iron, steel or brass placed in various locations. The use of metal hitch pin plates provided more secure anchorage for strings under higher tension. The combination of separate metal parts for strengthening the structure became known as the composite frame and was favored by English, German, and Austrian manufacturers during the mid-1800's. This system is now obsolete, having been replaced by the one-piece casting developed in the United States.

Early American Piano Making and Invention of The Cast Iron Plate[13]

In 1775 in Philadelphia, John Behrent built a Zumpe-type square piano, the first piano made in America. In the 1780's, a small number of pianos were made by Charles Albrecht and others in Philadelphia and in New York. However, Boston became the most active center of pianomaking, soon after the instrument maker Benjamin Crehore set up his shop in Milton, a suburb in the 1790's. John Osborn and the Babcock brothers, Alpheus and Lewis, were apprentices of his.

At first, American piano makers copied English instruments. After they acquired more experience, they began to introduce their own original ideas and inventions. This was the case in Alpheus Babcock's invention of the first one-piece cast iron frame in 1825. Babcock, now working in a shop with financial backing by John Mackay, disregarding the industry's prejudice against heavy masses of metal in a piano, conceived the idea of combining the hitch pin plate, bracing bars and metal portions covering the tuning plank into a single casting for a square piano. Babcock showed his progressive thinking again by adopting cross-stringing and incorporating it into the redesigned plate for square pianos he patented in 1830, two years after Pape had introduced cross-stringing, first used in vertical pianos. In spite of the obvious greater efficiency and other advantages of the one-piece frame, the old prejudice against metal retarded its adoption, even in the United States.

Jonas Chickering[14]

One of the first piano makers who foresaw the advantages of Babcock's idea and did much to develop it was Jonas Chickering. Chickering started his career in 1819 working for John Osborn, who had become a leading piano maker by then. In 1823, Chickering and James Stewart, a young Scot who had worked for Osborn also, formed a partnership and opened a new shop. After three years, Stewart left and returned to Great Britain. A year later, Stewart obtained an English patent for the method of doubling a single length of piano wire around the hitchpin to simplify stringing. This was the practice of most of the Boston piano makers while Stewart was there.

Three years after Stewart left, in 1830, John Mackay joined

Chickering as a partner to provide financial backing and business promotion. This left Chickering free to do the technical work on development and improvement of the pianos. The combination of high quality instruments and excellent business management brought the firm of Chickering and Mackay to national prominence by the end of the 1830's.

Chickering first used Babcock's frame for square pianos with minor changes. In 1840 Chickering made sufficient improvements to obtain his own patent. His most important achievement was originating the first full plate for grand pianos, a straight-strung design patented in 1843. Until then few grand pianos had been made in the United States. The popularity Chickering's grand pianos soon achieved in the United States caused a drop in imports of foreign grand pianos. Chickering Grand Pianos, exhibited at the International Exhibition in London in 1851, attracted great interest and won the highest awards. Most of the leading European manufacturers exhibited grand pianos with composite frames.

Chickering had three sons he had trained well in his craft. After a fire destroyed the Chickering factory in 1852, he took his sons into partnership and started construction of a new factory, said to be the largest building in the United States then, except for the Capitol building. Chickering died in the following year and his sons took over direction of the firm.

Design Developments By Steinway

In the early 1850's, piano making in the United States received a boost by the arrival of piano makers among the emigrants who left Germany because of political unrest after the revolution of 1848. Among the newcomers was Heinrich E. Steinweg and his family except for son Theodore. Steinweg, then 54 years old, had left a prospering business in Braunschweig. Steinweg had endured much hardship in his childhood because of the constant warfare in the area where his family lived. He spent several years in military service and was a bugler at the Battle of Waterloo. After release from military duty, he learned to service keyboard instruments as an apprentice and then began his own shop. He became an excellent piano maker and as his sons grew up they joined him in business.[15]

After arrival in the United States, Heinrich E. Steinweg was Americanized into Henry E. Steinway. In 1853, after Steinway and his two sons with him had worked for two years in other piano factories, the firm of Steinway and Sons was founded.

The Steinways gained success with amazing speed. In 1855, a Steinway square piano with overstrung full iron frame design received the highest award at a local trade fair in New York City. By a unanimous decision, this piano was judged to have the finest tone.

Steinway started building grand pianos also. Although some critics found fault with the tone quality of the pianos with the straight strung one-piece cast iron plates Chickering built, Steinway adopted this type of construction also and then proceeded to work on modifications to improve the tone.

One major change was to the overstrung bass strings, bringing them away from the side, where they had been in parallel stringing, to a more central area above the soundboard. In addition, the strings were strung in a fan-shaped manner. The bridge was lengthened by giving it more curve and it was moved further in away from the rim of the case. The result was improved response from the soundboard and greater resonance. Another benefit was more equal distribution of string tension. Volume of

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sound was increased by raising string tension and hammer weight. The Erard-type action was modified to compensate for the heavier hammers.[16]

Steinway obtained an initial patent for an overstrung plate in 1859 but still continued to work improvement of design.

Chickering and Steinway Pianos Achieve International Leadership

The Chickerings also adopted overstringing and other changes to improve their grand pianos. By 1860, Chickering and Steinway grand pianos had gained complete acceptance for concert work in the United States, and foreign pianos were rarely used. International leadership was achieved after the high awards given Chickering and Steinway grand pianos at the 1862 London and 1867 Paris exhibitions[17] The Paris awards established the supremacy of the American pianos and led to domination in the European musical world also, while the prestige of some European pianos, particularly the French, declined rapidly. This also started a trend away from the composite frame to the one-piece plate in European construction. Bechstein and Bluthner were quick to accept the American design. Others were slower in following.

One phase of the lively competition that had developed between Chickering and Steinway was in the solicitation of endorsements by concert pianists. Each manufacturer received large numbers of recommendations. Some artists, like Franz Liszt, gave praise to both pianos.

Steinway 1875 Design Becomes Pattern For Modern Grand Pianos

Steinway continued development work into the 1870's and introduced the duplex scale in 1872 and the '*sostenuto*' pedal in 1874.[18]

The Steinway 1875 "cupola" iron plate set the pattern which became the standard for the entire industry and is still in use today. The semi-dome construction of the back section provides increased resonance while affording enhanced tensile strength.[21,22]

The Steinway developments do not overshadow the achievement of Jonas Chickering who had the courage and determination to pursue and succeed in his ideas of piano design which were different from those of the contemporary leaders of the industry in Europe. William Steinway, a son who managed the competitive firm after the founders death in 1871, called Jonas Chickering "the father of American piano-forte making." Others go further and consider him "the father of the modern piano."

NOTES

[1]Arthur Loesser, *Men, Women and Pianos* (New York: Simon and Schuster, 1954, pp. 98-104.

[2]Ibid., pp. 132-133.

[3]Ibid., pp. 220-221.

[4]William Leslie Sumner, *The Pianoforte* (New York: St. Martins Press, 1966), p. 130.

[5]David S. Grover, *The Piano* (New York: Charles Scribners Sons, 1978), pp. 88-90.

[6]Sumner, pp. 48-51.

[7]Loesser, pp. 319-20, 337-38.

[8]Rosamunde E. Harding (New York: Da Capo Press, 1973 — Reprint of 1933 edition) pp. 156-57.

[9]Helen Rice Hollis, *The Piano* (Vancouver: David and Charles, 1975), p. 59.

[10]Grover, p. 158.

[11]Grover, Chapter VIII.

[12]Harding, pp. 198-212.

[13]Hollis, pp. 88-91.

[14]Helen Rice Hollis, "Jonas Chickering," *Antiques*, August, 1973: 227-230.

[15]Alfred Dolge, *Pianos and Their Makers* (New York: Dover Books 1972 — Reprint of 1910 edition), pp. 299-312.

[16]Loesser, pp. 494-496.

[17]Loesser, pp. 512-514.

[18]Grover, p. 143.

[19]Ibid., pp. 115-117.

[20]Loesser, p. 411.

[21]William B. White, *Theory and Practice of Piano Construction* (New York: Dover Books 1975 — Reprint of 1906 edition) pp. 79-84.

[22]Sumner, p. 73. □

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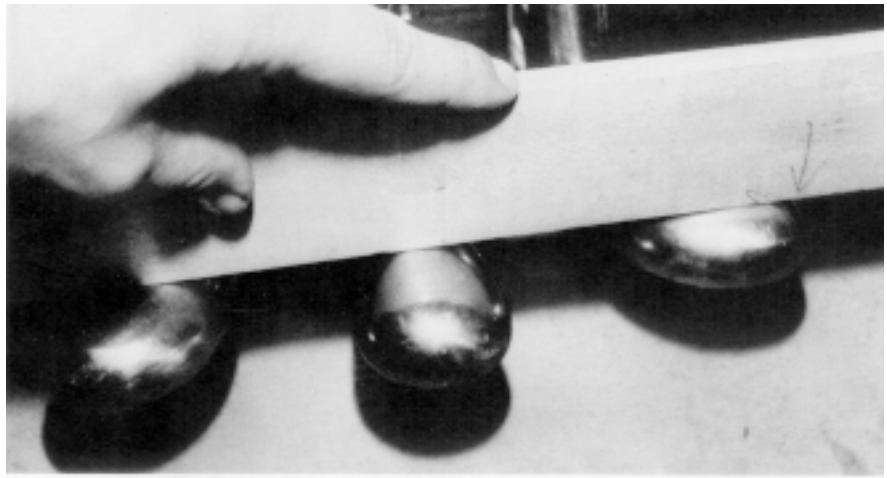
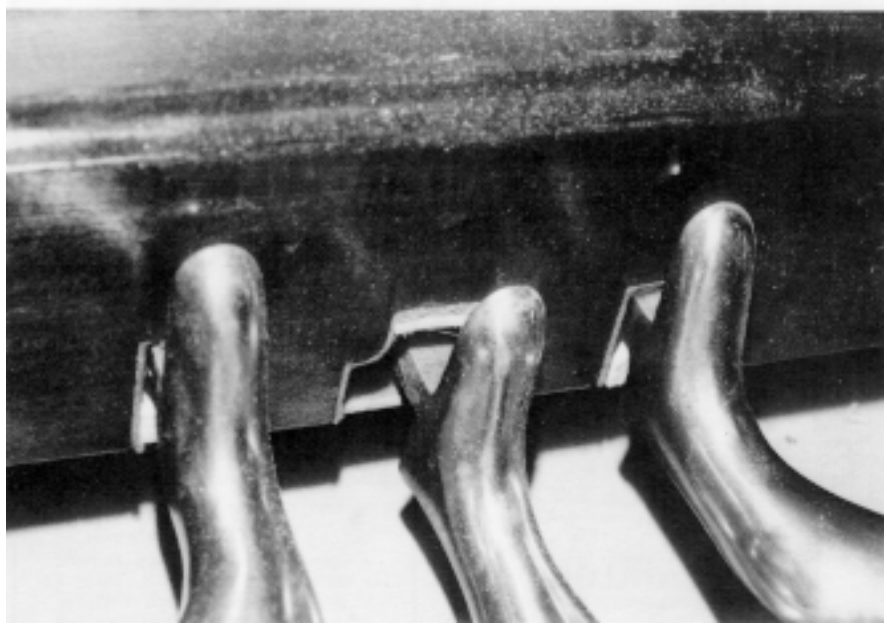




Pictures #1 and #2: Leveling the top of the pedals. Use firm felt stops on the top of cut-out. Cut-outs for the pedals should be lined with new felt. Note also, that the middle pedal swivels to the left. Make sure cut-out holds pedal in its left-depressed position.

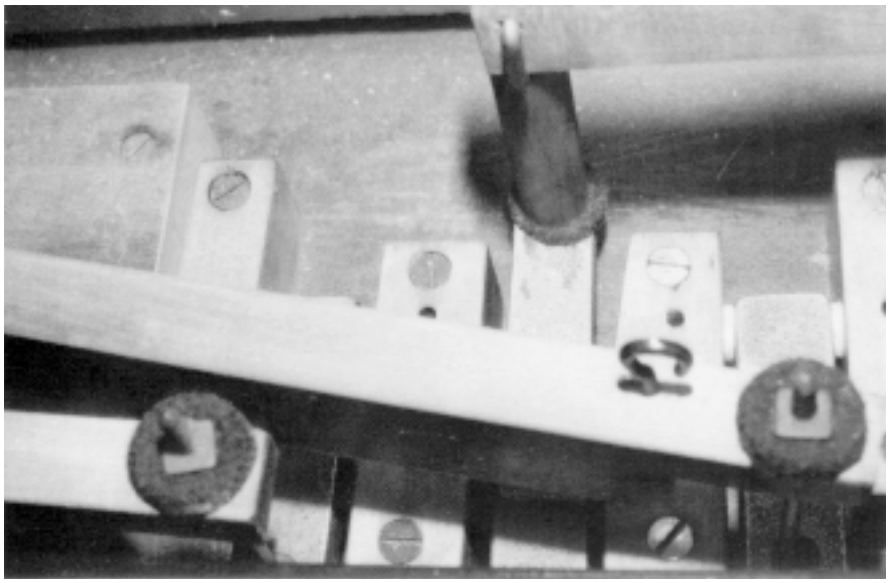
PRACTICE FELT RESTORATION

Rebuilding old uprights, vintage early 1900's, is a challenging experience. Usually you will get into much more than you bargained for, especially if the mice and moths have worked on them first. A piano that could have been reconditioned 20 years ago, is now either destined for the dump or in the category to be completely rebuilt. The complete rebuilding of an old upright is costly and one must decide whether the value of the instrument and the surrounding circumstances warrant a large outlay of funds. On the other hand, the complete rebuilding of a big old orange-painted upright is a tremendous learning experience, and perhaps from this point of view the outlay of time and money for materials can be justified.

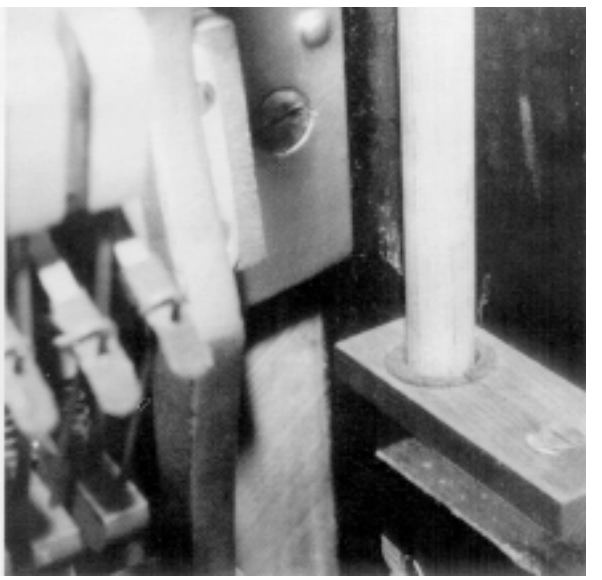
We often run into old uprights that have pedals which don't work. This can refer to many things: missing or broken pedals, rods not in place or broken, missing practice mute felt (if one was originally there). This month we would like to concentrate on one of the pedals of an old upright — the middle pedal — and show with photographs a procedure for installing and constructing a practice felt.

Some old uprights have a middle pedal that is attached to the same rail of the left pedal. It is there for looks only and performs exactly like the left pedal. Other instruments, such as the one we are using for these pictures, have an independent middle pedal, one that operates a practice felt that drops between the hammers and strings to substantially muffle the sound.

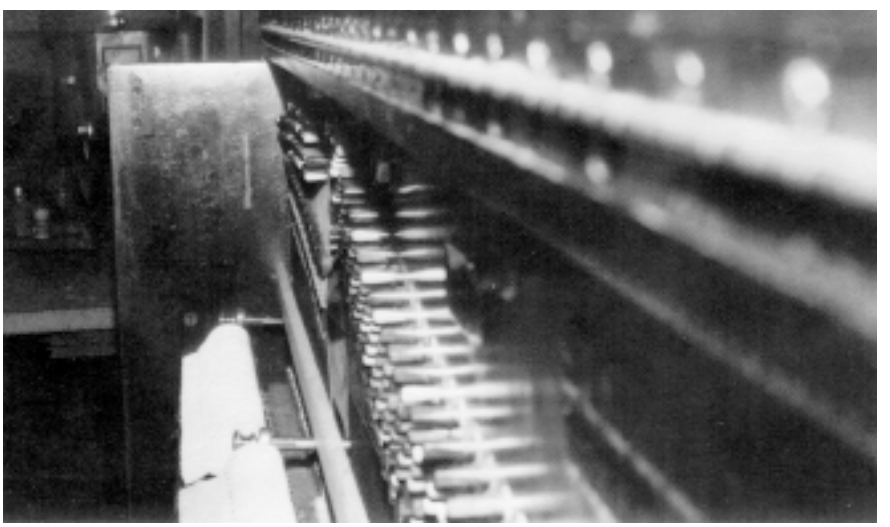
Installing a practice felt such as this one is not really difficult. It takes a little imagination and good planning. Once you establish the overall picture and have in mind what the finished product is going to be, then the rest is easy. Woodworking experience is a definite help in tackling a project such as this.



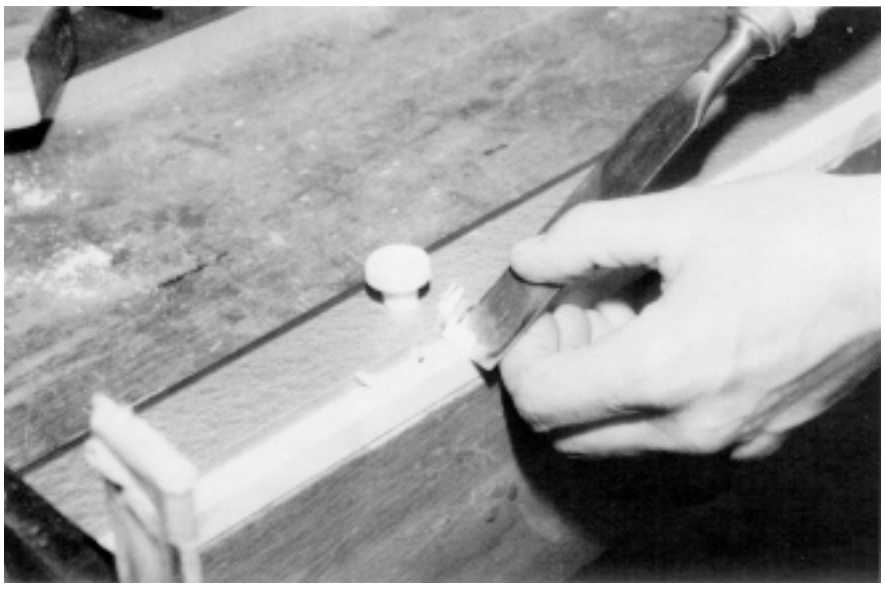
Picture #3: Layout of pedal blocks. Clearance for middle pedal to swivel to the left must be adequate.



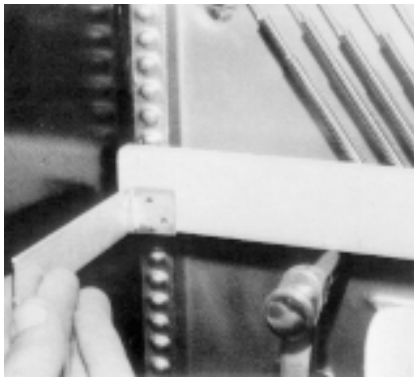
Pictures #4 and #5: Rail and rod on right side of case which will operate practice felt. Pin in wood must fit properly; spring on underside of rail should be strong enough and hole for the rod should be properly bushed to allow rod movement free from squeaks and rattles.

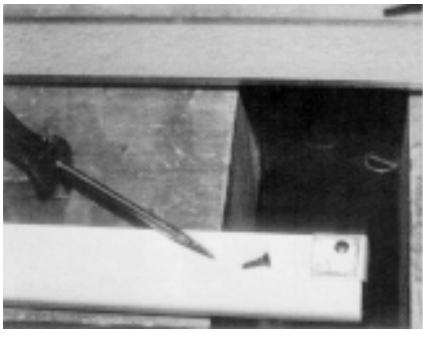


Picture #6: A strip of spruce molding (⅜" × 1-1/4" approx.) is placed lengthwise near the strings to **judge** the available clearance. This wood which will have felt glued to it will be moving in an arc and clearance of all obstacles — pressure bar, tuning pins and bass strings — is necessary.

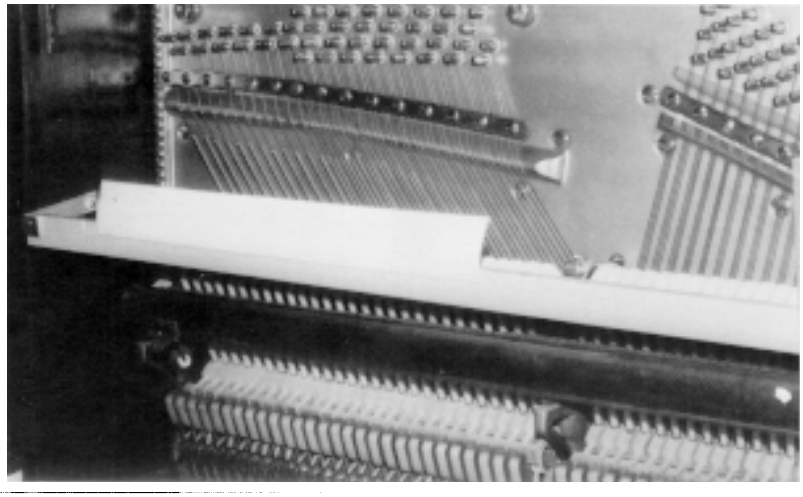


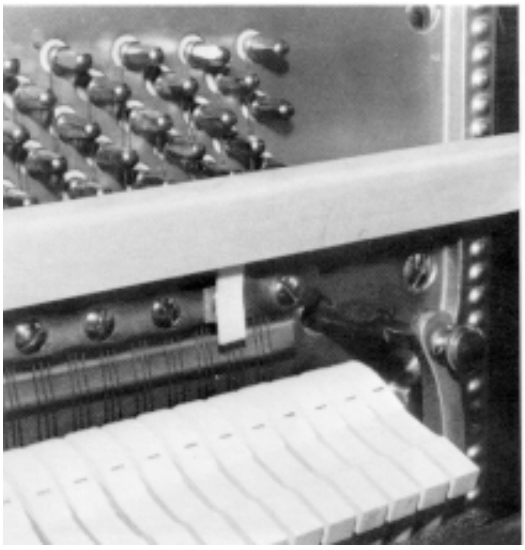
Picture #7: Chiseling out a ledge in the bass section for the felt. This will allow the mute to be closer to the treble strings than would otherwise be possible. We are making the bass end of the molding somewhat thinner. This will allow the felt, when it is glued to the molding, to be the same distance from the strings in both bass and treble sections of the piano.





Pictures #8 and #9: Planning the placement of the aluminum brackets. Note the light pencil lines marking the length of the molding, placement of the molding over action bolt, and a longer line just to the right of the bolt marking projected felt placement. Make brackets out of 1/16" × ¾" aluminum stock. Cut molding to length before brackets are attached. Drill holes in aluminum brackets and screw to molding.

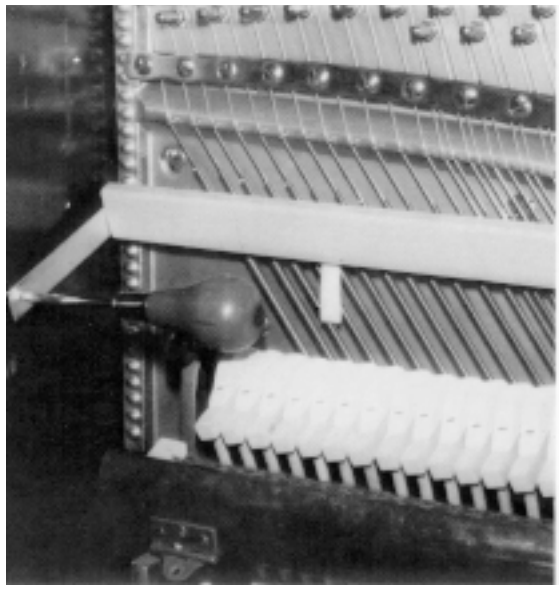


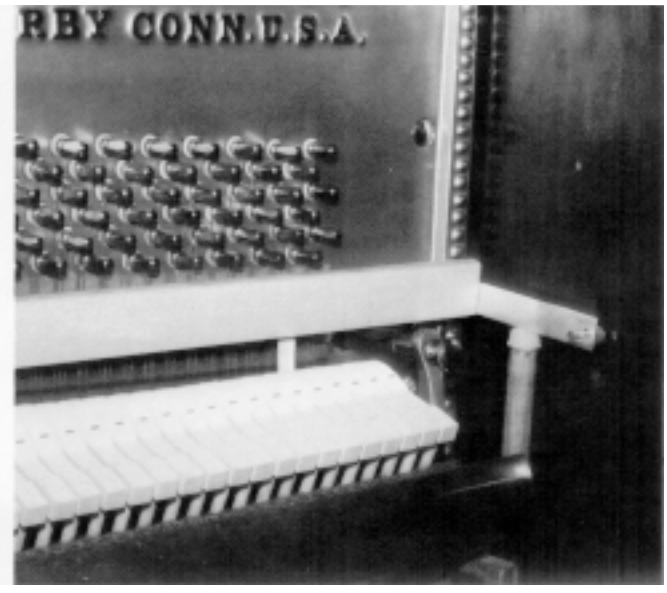


Pictures #10, #11 and #12: With an awl molding and mute for the proper height, en

Picture #13: Bottom stops glued to the bott the pedals limit downward travel of pedals. Fe placed under middle pedal to limit the down Picture #12 shows the down position of the

Picture #14: Bass felt glued in place. The pr his manner, making room for tuning without ha mute out.





isting crew hole determine the exact placement of the molding with sample felt in place. Check the placement of the clearance, and the arc movement that the pedal travel gives you.

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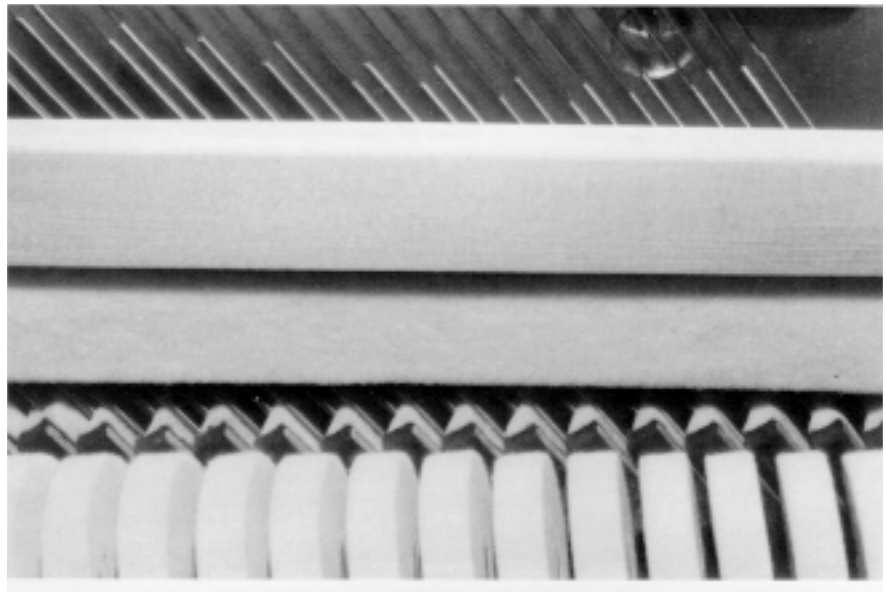
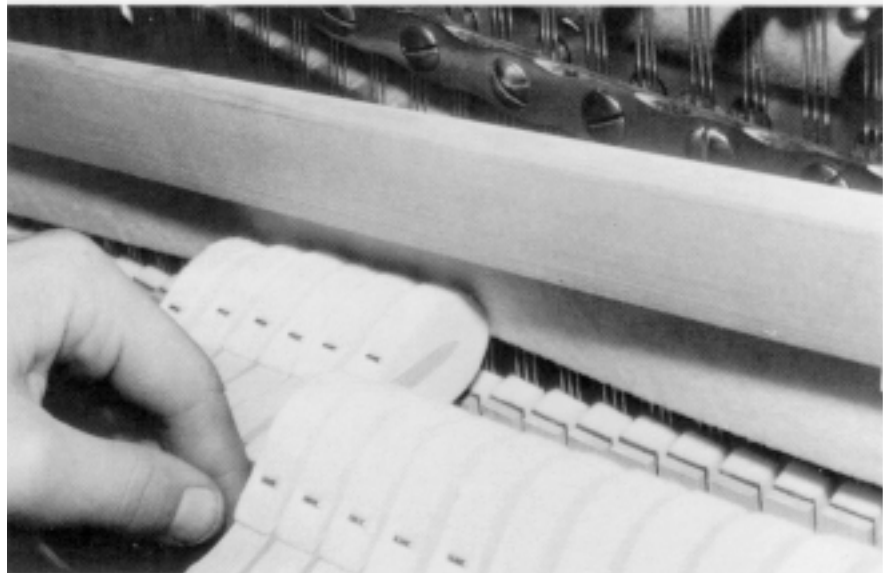


icture #15: Mute in down osition. Damper clearance important.

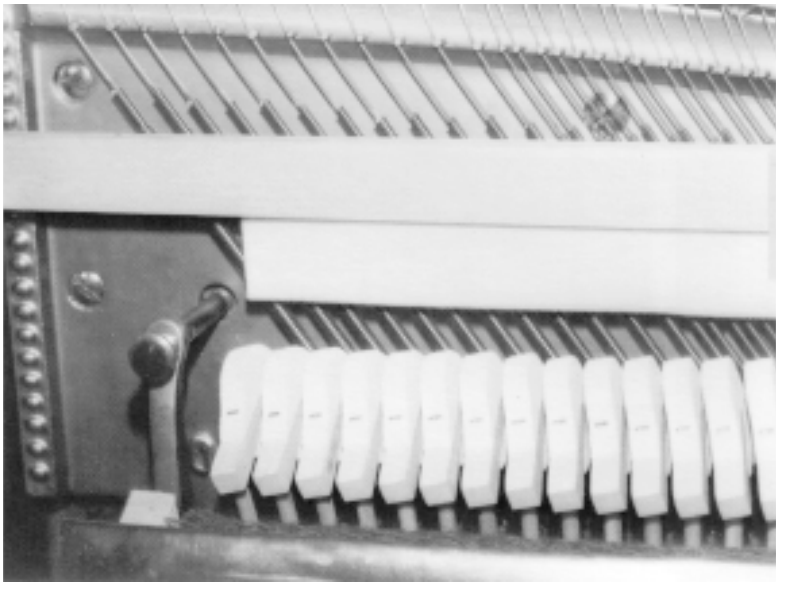


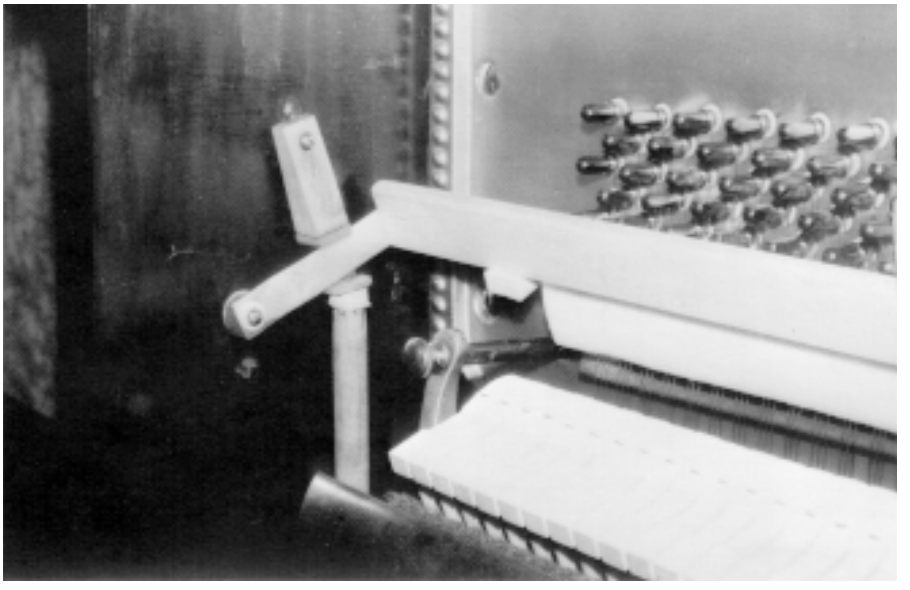
icture #16: Middle ection of piano showing ammer striking position ith respect to practice ute in its down position.

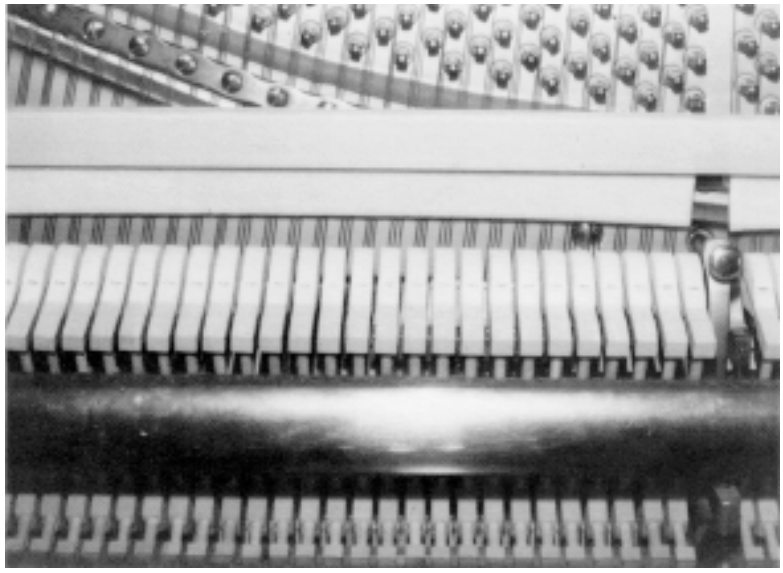
mute flips over in
o take the practice

Picture #17: Bass section showing hammer striking position with practice mute in its down position.

Pictures #18 and #19: Practice mute in up position in bass and treble. Felt stops were added to prevent the molding from bouncing on the vertical rod. A piece of hammer felt is used as a stop to insure that the action bolt and the molding don't come into contact







Picture #20: Felt cut and glued on molding so that it is straight and cut correctly around action bolts. Clearance is important but felt must also cover the striking position of the string to be consistent and effective.

YOUR BOARD in ACTION

A SPECIAL REPORT
By Northeast Regional Vice President
Dick Bittinger

My wife and I just returned home from Toronto, Canada, where we spent an unbelievable weekend with that chapter. It was something you don't experience often, and it didn't happen over night. By that, I mean a few dedicated chapter members worked on this workshop since July.

My family and I had stopped in Toronto in July on our way to the convention in Minneapolis. At that time we had a meeting, handed out applications, and "did a little technical," which my son, Jim, helped me with. Everyone seemed eager for more and we decided to oblige them. John Lillico, the president at that time, set up a workshop and tests for the weekend of November 3–4.

What a meeting! Saturday we had workshops and testing in a church, which was a great set-up, and Sunday we were at John Lillico's shop. John called the day before we left and said he had 10 people coming for tests.

Being a resourceful R.V.P., I thought I'd call on President Bob Russell who was going to be present doing some technicals, to come up with more help. Of course, he came through. Bob's son, Mike, who works in the shop at home, was along to help with the technicals, and his son, Bob, who is a Registered Technician, took a big share of the testing. John Lillico and I also did a class, so you can see we were working hard.

When we arrived, the Toronto Chapter had one Registered Technician member besides John, Ray Anderson. Ray pitched right in and helped everywhere. Incidentally, Ray is now chapter president and John is secretary-treasurer.

We never thought we could test all those people in one day, but the church was ideal to set up a production line. We did have to refrain from a tuning test in the sanctuary during a 4 p.m. wedding. It was good that we had such a set-up, because 13 people showed up to take the test, 34 people attended the Saturday workshop, and 31 on Sunday.

I don't think any of us will ever forget November 3rd and 4th, 1979! Wow! What a chapter this is going to be! I'd say this was a very successful venture for the Guild and everyone concerned. As Regional Vice President, I want to thank John Lillico for all the work to set up the workshop; Ray Anderson, who was right there to help with everything; President Bob Russell and his sons Bob and Mike; and my wife, Celia, who scored and totaled the tests and kept the papers in order. What a team — without any one of these people, it would not have been possible!

This reorganized chapter will be tops. The friendliness and fellowship were priceless. I'll say it was a perfect weekend, since Bob Russell made it back through customs with his station wagon full of equipment.

Thanks to everyone involved for the opportunity of sharing in such a weekend.

Calculating Technician Part V

Dave Roberts

Last month, we discussed different types of electronic calculators available to the piano technician. These include the simple four or six function variety, the basic scientific units and the card and/or key-programmable scientifics. This month, we'll go into some detail about specific brands and models. I'll restrict this discussion to scientific and programmable calculators made by the two leaders in the field, Texas Instruments (TI) and Hewlett-Packard (HP).

It is difficult to keep abreast in this fast-paced consumer market, because the number of models and prices keep changing so fast. One thing that hasn't changed is that there are many loyal advocates of both TI and HP calculators, even though differences in the internal logic systems of the two brands require somewhat different approaches to problem solving. Without going into detail, suffice it to say that either approach will work just fine for the calculating piano technician. If I had to make an educated guess (I am familiar with both systems). I'd say that, for the average technician, TI's so-called "Algebraic Operating System" (AOS) initially seems the easiest to use for solving relatively simple formulas. On the other hand, for formulas like our tension equation (December 1979 Journal) and especially even more complicated formulas, I find problem solving somewhat easier using HP's so-called "Reverse Polish Notation" (RPN) logic system. Further, HP's efficient RPN system is complemented by a simpler keyboard layout (fewer keys and simpler labeling of key functions) and a more straightforward system of utilizing combination (merged) keystrokes to define various kinds of math and program functions. I emphasize, however, that either AOS or RPN can be learned by the average person in a short time. Neither system requires any prior experience with electronics, computers or complex mathematics.

If you already have a four or six function calculator, its logic system most likely resembles AOS rather than RPN, but this should not necessarily deter you from considering HP if you want to move up to a more advanced calculator. I personally prefer HP products because of the RPN logic, exceptional quality and attention to detail ("feel" of the keyboard buttons, etc.), but TI prices are difficult to beat. It is also of interest to note that Dr. Albert Sanderson has successfully implemented the TI-59 card programmable calculator into the evaluation portion of the proposed standardized Guild tuning test. This calculator is well suited to the task because it allows you the flexibility of apportioning the total calculator memory into your choice of "program memory" and "storage memory." It is also far less expensive than the only HP calculator which offers this same feature (HP-41C).

Listed below are most of the current models (as of December 1979) of TI and HP scientific calculators together with some features and discount store prices. Except for the TI-30, all have either a liquid crystal display (LCD) or else a light-emitting diode (LED) display with AC adapter/charger included. The programmable models with a "C" suffix have continuous memory (see last month's article), which makes the key-programmable versions almost as handy to use as a card-programmable, as long as you intend to use the same program over and over. With the HP-41C, it means you may choose to forego the (separate) card reader and save $180 on the prices given in the table. With the TI-58C and TI-59, you can "trade-off" each "storage memory" for eight "program memories" (seven with the HP-41C), or vice versa, which gives these programmable calculators exceptional flexibility for custom requirements.

Certainly, we cannot do an in-depth comparison of the different brands and models in this short article. Other features

should be considered before deciding what is best for you. You should be aware, however, that it is sometimes difficult to compare feature for feature in the different brands. One somewhat subtle example is the comparison of "program memory": since several math and program functions in the TI calculators take 2-3 times as many "program memories" as an HP calculator would, one should perhaps halve the number of TI "program memories" shown in the table before making the comparison with HP calculators. Another difficult comparison is HP's accessible "stack" and "last x" memories with TI's inaccessible "stack" memories and parentheses notation. These constitute the heart of the RPN and AOS logic systems. Although it would take an entire article to do justice to this comparison, I repeat that both can easily be learned by the average person.

Next month, it's back to calculations, so stay tuned to this column. . . . .□

	make/model	display	"storage" memories	"program" memories	price	printer
Basic Scientific	TI-30	LED	1	none	$ 14	NA
	TI-25	LCD	1	none	$ 30	NA
	TI-50	LCD	2	none	$ 30	NA
	HP-31E	LED	4	none	$ 40	NA
Key Programmable	TI-55	LED	10	32	$ 35	NA
	TI-57	LED	8	50	$ 40	NA
	HP-33E	LED	8	49	$ 80	NA
	TI-58C	LED	30	240	$100	$170
	HP-29C	LED	30	98	$150	NA
Key & Card Programmable	TI-59	LED	60	480	$230	$170
	HP-67	LED	26	224	$350	NA
	HP-97	LED	26	224	$630	INCL
	HP-41C	LCD	17	322	$470	
	plus 1 add-on module		49	546	$510	$330
	plus 4 add-on modules		145	1218	$630	

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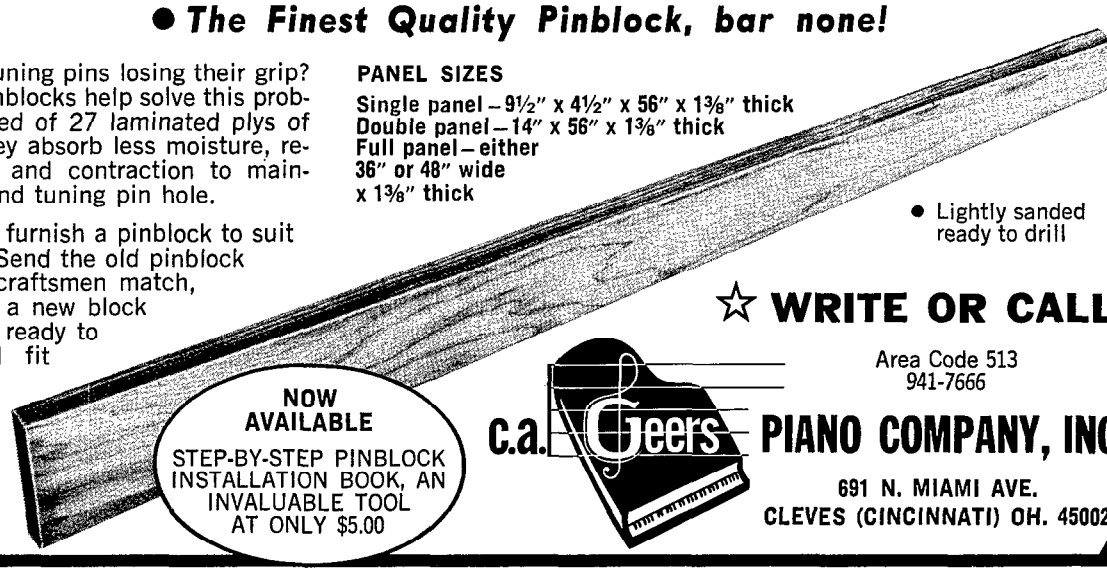

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The Newest Fear of Flying: Ear Damage

by Charles Feldman and Mark Diamond

(Reprinted from the New York Magazine, Jan. 8, 1979 edition)

Barbara Quenton's story will probably scare a lot of people away from flying, because it's true, and not an isolated case. Barbara arrived at the airport in Sydney, Australia, feeling fine, except for a slight sniffle she attributed to her mild sinus condition. The 25-year-old Aussie was set for her much anticipated tour of the United States. Sitting on board the gleaming jet liner, Barbara Quenton listened to the stewardess's instructions on the plane's safety features: the life rafts beneath the seat, the oxygen masks that would, the flight attendant explained, fall onto the passengers' laps in the event the cabin lost pressurization at high altitudes. The plane started its roll down the runway and soon ascended skyward.

The hours spent spanning the Pacific passed uneventfully, and in what seemed like a small expanse of time, the jet liner was set to land in Los Angeles. The pilot illuminated the FASTEN SEAT BELT sign as the aircraft started its gradual descent into the City of Angels. As the plane gently lost altitude, the air pressure inside the plane's cabin increased, as it was supposed to.

Barbara Quenton must have noticed other passengers around her yawning wide or chomping on sticks of chewing gum to relieve the annoying sensation in their ears by the build-up of cabin pressure. But Barbara felt considerably more discomfort than most of her flying companions. The acute pain in both her ears, which persisted long after the plane touched down in L.A., caused her to seek out medical attention. She was treated with antihistamines, and within three days, still suffering, Barbara was back on a plane to New York. Now the severe headaches began. Her carefree vacation was fast becoming a nightmare.

Upon landing in New York, she quickly sought out the aid of a Manhattan physician, who diagnosed her condition as possible meningitis. She was hospitalized, and the suffering continued.

Within 24 hours of this diagnosis, Barbara Quenton experienced suddenly, fiercely, a total loss of hearing and the loss of vision in one eye. Despite vigorous antibiotic treatment, her condition worsened with each passing hour. Tests were performed.

"Her mild sinus condition had developed into massive infection of the sinuses and mastoid bones," recalls prominent otolaryngologist Roger Miles Rose. "We operated and discovered quantities of fluid and infected material in the ear, which was causing pressure on the optic nerve and was responsible for Barbara's loss of vision."

Barbara Quenton, whose name is fictitious but whose case is real, was experiencing an extreme example of what doctors call barotrauma of the ear and sinuses. It is a condition caused in large part by changes in pressure, as occur in an airplane cabin, and is far more likely to occur if you fly with a cold. In her case it led to meningitis.

While less severe but nevertheless painful cases of barotrauma of the ear have long been observed in some airline passengers, audiologists and otolaryngologists have only recently begun to understand fully the more severe cases. A number of specialists have come to the realization that the changes in air pressure that occur as an airplane ascends and descends, once thought to be a mere annoyance, are actually the cause of over 2 million cases of pressure-related sinus and ear disorders each year. These disorders may manifest themselves through a variety of symptoms,

ranging from mild inflammation or infection of the middle ear (called aerotitis), to more severe and comparatively rare inner-ear trouble, to the meningitis which left Barbara Quenton almost totally deaf for life.

In order to understand what harmful effects changes in pressure can have on the human ear, it is first necessary to understand exactly how a healthy ear compensates for pressure changes.

Dr. Stanley Mohler, former chief of the Aeromedical Applications Division of the Federal Aviation Administration in Washington, D.C., explains: "Under normal circumstances, air in the middle ear comes out of the Eustachian tube during pressure changes, so there's a balance of air on both sides of the eardrum. As you climb in an airplane," Dr. Mohler continues, "air expands, so it gets thinner, causing less stress to the ear, and easily comes out of the Eustachian tube into the throat; you don't even notice it. The problem comes at the end of the trip, when you're coming down and the air pressure is building up on the head and outer part of the eardrum. This tends to push the eardrum in. To compensate, you must now get air back into the inner ear through the Eustachian tube. In this way, air pressure is equal on both sides of the eardrum."

If all is well, most air passengers will notice little more than the familiar pop in the ears, or a plugged-up feeling as the plane descends for its landing.

But often, and for a variety of reasons, the ear does not make these adjustments. The resultant air pressure on the delicate bones and tissues may cause one of two things: inner-ear barotrauma or aerotitis (a comparatively milder affliction).

"Aerotitis is caused by an inadequacy of the Eustachian tube to equalize fast enough when subjected to rapid pressure changes during descent from flight," explains Dr. Maurice Miller, professor of audiology at New York University. "This may be due to failure of the Eustachian tube to open simultaneously and then an inability to open the tube by deliberate means" (such as yawning, chewing gum, or gently pushing your nose and blowing). "The little valve in the Eustachian tube will just not open."

In its mildest form, aerotitis causes a feeling of pressure in the ear and some pain, which usually abates soon after the plane has landed. The passengers will complain of some hearing loss, but this is transient for the most part. So common is this affliction, says Dr. Rose, that many passengers have come to expect it as a normal result of flying. In fact, Dr. Rose points out, "the Eustachian tube probably wasn't meant to fly."

But in many cases the symptoms can be more severe, as NYU audiologist Miller explains: "The passenger will have severe pain in the ear; experience a noticeable hearing loss; experience tinnitus, or a ringing sensation in the ear; have the disturbing sensation of hearing his own voice amplified and distorted; and suffer vertigo, or dizziness." These symptoms may linger anywhere from three days to two weeks after the flight. If there is one thing that all the experts agree upon, it is that, as air travel becomes more common, the number of cases of aerotitis will continue to escalate.

While aerotitis can afflict an otherwise healthy individual, most doctors seem to agree that a person flying with an upper-respiratory disease is that much more susceptible to pressure-related disorders. "If you fly with a cold you're very likely to get aerotitis," comments Dr. Jack Pulec, a prominent Los Angeles ear specialist. "An allergy, sinusitis, seasonal allergies, or anything that would cause a swelling of the Eustachian tube makes one susceptible to aerotitis."

Clearly, the relatively milder aerotitis of the middle ear is not what Barbara Quenton suffered through; her malady was even more severe. Dr. Miller says that the number of reported cases of inner-ear barotrauma, such as Ms. Quenton's, has increased in the past decade. "Awareness is relatively new," continues Miller, "that pressure changes can cause these inner-ear problems. It is a phenomenon of the seventies," Dr. Miller said, pointing out that an increasing percentage of the populace has taken to the air.

Inner-ear barotrauma occurs when a fistula (basically, a hole) develops in the oval or round windows of a fragile inner-ear structure called the cochlea. Perilymphatic fluid from the cochlea leaks out, causing severe congestion and inflammation.

"This problem is normally not reversible," explains Dr. Miller. "Ruptures of the inner-ear membranes are often untreatable and can result in a total hearing loss."

Dr. Pulec recalls a patient of his, a South American businessman, who underwent surgery on one of the small bones of the inner ear, called the stapes. "Five years later, " Dr. Pulec explains, "the man lost his hearing upon descent in an airplane." It is the spontaneity with which this deafness occurs that worries and baffles doctors: While the experts can explain what happens to the inner-ear mechanism, they are at a loss to explain why it happens to some individuals and not to others.

Congenital defects of the inner ear, exacerbated by pressure changes inherent in air travel, are considered by many experts to be a major cause of inner-ear barotrauma. The frightening thing is, until taking his first flight, the individual with such a defect may not know it exists. The revelation is monumental.

As Dr. Rose explains, the number of persons in this country born with defects of the inner ear is greater than most people think. And as more and more people take to the skies, many otherwise dormant inner-ear defects are coming dramatically to life.

Now that you've heard from the medical experts, you might be wondering what some of the airline companies think of the problem. While most airline spokespeople do not recognize ear injuries as a potential hazard of flight, the nation's largest airline, United, does.

"It's something that we talk about a lot," Sally McElwreath, manager of public relations for United Airlines, candidly admits. "Aerotitis is a fairly common ailment. It's very painful. We strongly suggest that our pilots and flight attendants not fly if they have a cold. If they continue flying with a cold, instead of having them out for one or two or three days, you'll have them out for weeks because of an aggravated condition."

Aerotitis and inner-ear barotrauma may be something United Airlines talks about all the time, but Dr. Stanley Mohler feels that "crew members almost never get aerotitis. It's just simply not a problem." But while it may seem that crew members seldom develop pressure-related ear problems, Dr. Roger Rose is frequented by many patients who are airline employees.

"Aerotitis is in fact a common problem," Dr. Rose points out. "But air-crew members often don't go to airline doctors for fear of being grounded."

But there's more to the explanation than that, as Albert Eastman, an official of the Flight Safety Foundation, points out. "It is a common problem," states Eastman. "I don't know of anybody, including pilots, who likes to emphasize the discomforts of flying in an airplane."

Yet it is not only the air crew who manage to keep mum on the subject.

"Passengers themselves seem to accept the problem as to be expected," explains Dr. Miller.

Between the air crews' fear of being grounded and airline passengers' lack of awareness on the subject, it is little wonder that airline companies are able to look at pressure-related ailments as little more than a nuisance, to be ignored in light of more pressing problems such as which type of steak to serve passengers on their flight to Hawaii.

As long as man continues to fly, he will be subjected to the stresses of alterations in air pressure. At this stage of our technology there is little that can be done about this. Even pressurized cabins such as those found on modern jet liners don't adequately protect the human ear from the changes in pressure encountered upon descent. But while little can be done about the pressure, the experts agree that there are things that each individual can do to minimize the risk of developing aerotitis or inner-ear barotrauma.

"Passengers should be warned against flying with a cold. It's a hazard that a person who flies should be made aware of," notes Dr. Miller. Also, some way should be employed to "screen passengers for indications of upper-respiratory problems."

While airlines will often offer wine to their passengers, Dr. Miller believes this to be "unconscionable." Otolaryngologist Ira Rothfeld explains that wine contains a lot of histamines, which act as a vasodilator and aggravate the problem even further. Sherry and port are the worst wines to drink, yet they are made widely available on flights. Furthermore, airlines should wake up everybody upon descent. It is in this condition—while asleep—those passengers are in especial danger. The individual can make no attempt to open up the Eustachian tube. "Infants are particularly helpless, for they just don't know what methods to employ to help themselves," notes Dr. Rose. "Parents shouldn't lay children on their laps or give them milk to drink upon descent. Sit them up, give them water or nose drops, or a pacifier to suck on."

Dr. Rose recommends a novel way of detecting possible ear trouble. "If you suspect you have a problem, go to a tall building and take a long elevator ride. If your ears bother you, then don't fly."

The plethora of home remedies for blocked ears can also be useful. "Chewing gum is a useful procedure," points out Dr. Rose. "Yawning and pinching the nose gently and blowng are very helpful maneuvers too, but don't give up if they don't work immediately. The use of nasal decongestant and over-the-counter decongestants a half hour before descent is also very useful. The important thing here is to take then *only* one half hour before landing. It's not nearly as useful to take them hours before."

Yet even United Airlines answers with caution when presented with specialists' suggestions to make announcements on their flights as to how to relieve pressure and thus prevent possible danger. "Often when you call attention to something like that which has not previously been a problem with passengers," comments Sally McElwreath, "it becomes one. People tend to get symptoms."

No one is suggesting that people abandon flying. What is recommended, though, is that people become "educated fliers." Once understood, the risks of flying become manageable. Yet until that time, until the medical community as a whole, and not just the handful of specialists, becomes educated and takes on the onus of educating its patients about the consequences of aerotitis and inner-ear barotrauma, and how to prevent them; until airlines come to accept greater responsibility for the safety of their passengers' hearing; until passengers themselves learn to accept responsibility for their own health and well-being, we are likely to see many more Barbara Quentons living with pain and injuries that probably could have been avoided.□

Charles Feldman is a writer for WPIX-TV news. Mark Diamond is a free-lance writer who lives in New York.

GET THE ICE OUT OF PRICE

Stanley Oliver

There are certain rules of the road in selling your services, that when observed, make customer relations a pleasure. While not literally putting you in a position to use bags of gold for door stops, they can considerably enhance your earning abilities. The best of salesmen must still have something worthy to deliver. It's not always true that if yours is a better mousetrap the world will beat its way to your domicile. Good technical skills coming in large part from shared experiences within the Guild can be clothed in good human relations.

In milling around some 35 years in our profession, it seems to me that the contracting of major work running from some hundreds to many thousands of dollars necessarily incorporates these elements:

(1) A careful analysis of the piano, block, strings, hammers, regulation, tone, case, etc.

(2) A judgment on how to go; i.e., reshaping or new hammers, restringing or new block, etc. Especially relevant here is how the piano is used, the musical proficiency of the owner, and what restorative funds can be used.

(3) The price for the work. If one or two hundred dollars must surely be quoted on the inspection trip and if the work entails two-way moving costs, refinishing, etc., I have found it most expedient to "check my catalogs" or auxiliary labor sources and come up with a definitive quote that evening, and in the majority of cases, with a neatly typed letter spelling everything out. With larger jobs running into many thousands, it is expected that time for careful computation is necessary. Fast quotes on the job for major work is a risky business. Taking time impresses customers with the fact that their investments in restoration are being minutely considered by you.

(4) The last area my customer hears from me with regard to the piano is a clear exposition of benefits accruing from the work. The human mind operates in an odd manner; it tends to dwell upon the last area coming to attention, giving it major significance, while adding in other periphery elements.

In Wheeler's tested selling practices, reference is made in various ways to selling the sizzle, not the steak. That this surely works can be found even in used car lots where a special spray carrying the new car smell is often used. The prospective buyer believes his nose that somehow the venerable clunker with a death rattle in the transmission must be basically okay since it patently smells like a new beauty out of Detroit.

If the last area you give your customer is the bitter pill of cost, you have boxed yourself in a disadvantageous position. What he or she really wanted was an improvement of tone, a quiet powerful action and a glistening case. The price is only an inescapable concomitant. While it is quite important to know our field as thoroughly as possible, it is equally important to state sometimes complex considerations in simple, everyday language. Unfortunately, our craft is as guilty of technical obfuscation as that of the doctors and lawyers. You can lose your client by not making clear what is involved. In equal fashion, when dealing with sophisticated demanding pianists, it pays to listen carefully and courteously although sometimes their comments can be devoid of technical merit. For the long haul there is nothing wrong in reading up on contract law. The basic elements of a contract involve a meeting of the minds, and if your taste so inclines, current treatises on torts will be fascinating perusal. Selling additional services can be a happy experience for you and the customer. Arrange the priorities of your presentation in four steps, wind up with the sizzle not the steak . . . take the ice out of price by putting the profit in. . . □

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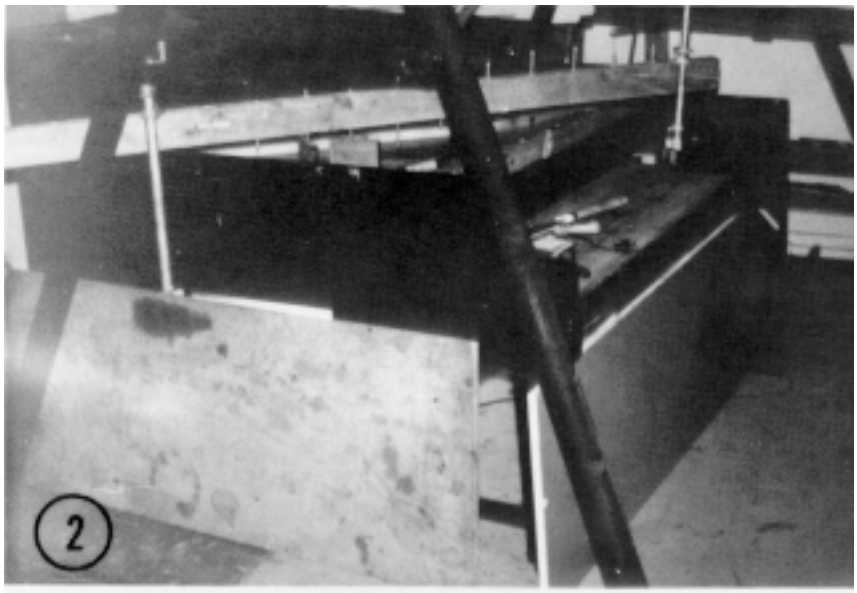
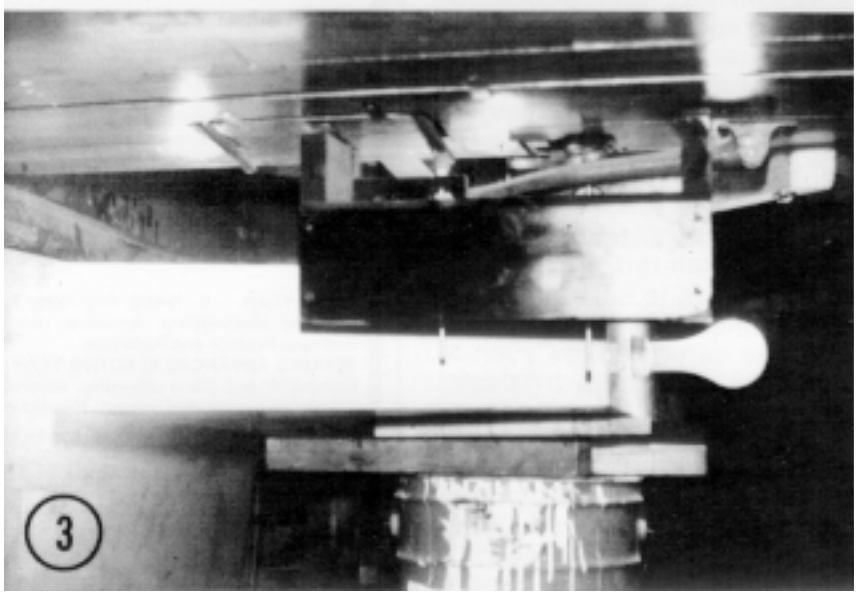
CHIPS OFF THE OLD BLOCH

John Bloch





Subject: Bechstein A #63822 Grand Piano
Continuing a letter to William Noel Brooks:

Dear Noel:

We will come back to more on *question one later.*

Question two is on "How much heat and for how long?" We now use an electric convection heater. See **photo #1.** There are no moving parts; we

can therefore leave it on overnight. It is a fin type heater like *those used in hot water heating,* but without the water. It can be controlled by dials so the heat produced is warm, going through the soundboard up and into the air above the piano.

The piano has the plate off, and we have started the crowning of the soundboard; that is, convex toward where the strings will be replaced.

(For an interruption which I did not know when writing my article, "Can a soundboard be recrowned?," some technicians did not know that back some time before the 1800's the crowned soundboard, that is, convex toward the strings, came into use and was accepted as the answer.)

This is the time to turn on the heater under the soundboard. We leave the heat on until we put on the varnish sanding sealer when through working on the soundboard. We like to cover with boards under the piano case to the floor and leave the top open. See **photo #2.** We maybe even have a fan across the top of the piano to exchange the air.

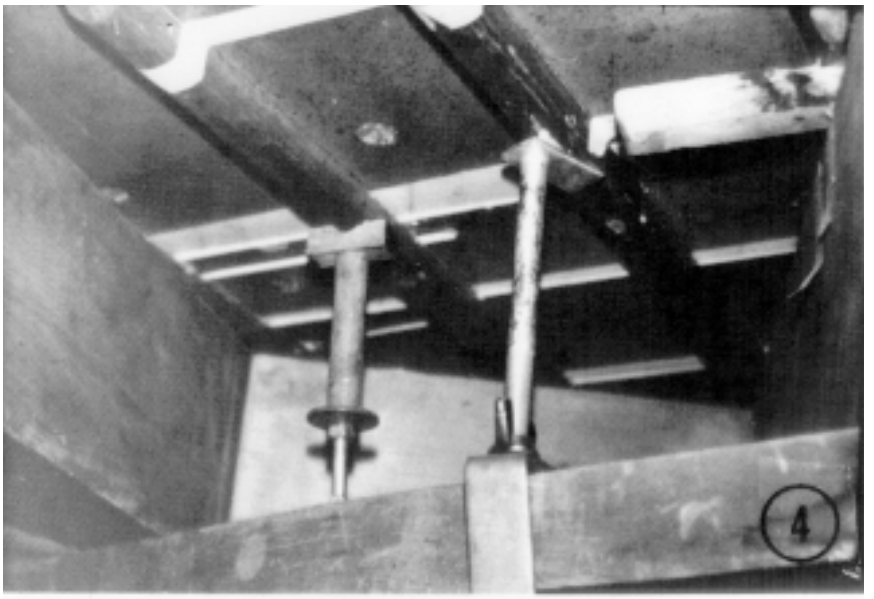
Before we had the convection heater, we used light bulbs. See **photo #3.** We put about four light bulbs on an old metal window sign with sockets going inside and out.

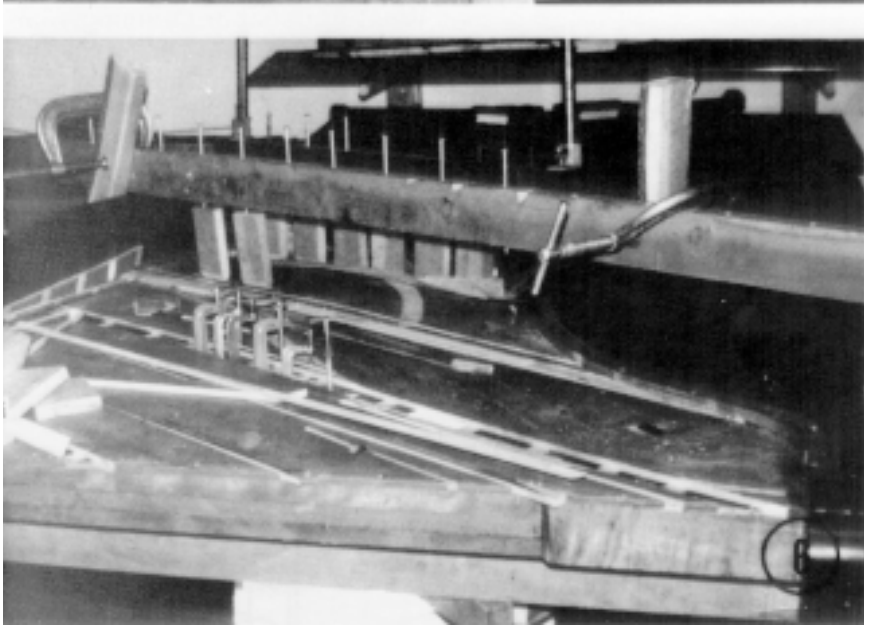
Some of the bad things about the light bulb idea were: we did not dare to leave it on overnight; light bulbs do not get the best use of your energy; and spot heat areas develop (uneven heat). On vertical pianos we use damp-chasers first when they are vertical and closed. When they are on the piano tipper (mule), the heater is used in the same way as on grands. One good thing about light bulbs is that they are cheaper when starting out.

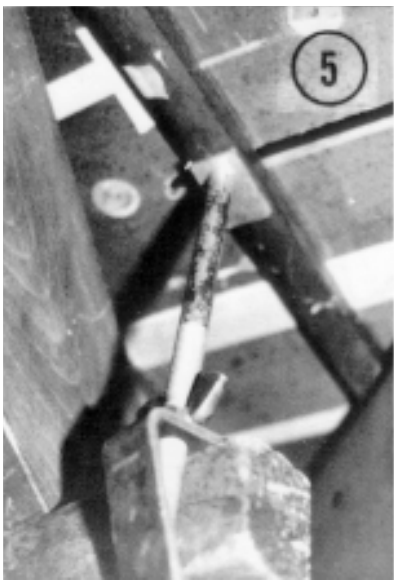
The heater is only to keep the soundboard warm. There should be no cooking. You can touch the soundboard at any time and work on it. Your possible shims are lying on top of the soundboard, plus sections of old soundboard for inlays. They are being heated and ready for use.

Now, as you asked, how did we get the crown up? Noel, we push that soundboard up pretty hard. If it lets go at the edges, down it comes again to be glued or epoxied. *Rule 1:* If a void, epoxy; *Rule 2:* If no void, use yellow glue (Titebond).

More on question two, "Wedges for screw clamps? The gap between braces and ribs is 10 mm." As you can see, we use everything — wedges, T-bolts, hammer shank pullers, player stack clamps, and even the turn end of pipe clamps. See **photos #4 and #5.**







In some parts of humid country, they tell me that if you see 3-4 cracks in the soundboard on your exam, you will see a dozen cracks when you get the plate off. In our dry climate, you see the cracks on your exam, and when you are raising the soundboard they get wider. Sometimes when raising the soundboard you get some more cracks you did not see to pop open. If they are close together, you will be in for an inlay of old soundboard. **Photo #6** shows the top part of the soundboard being worked on. Usually you want the shim in the soundboard to go through all the way so it doesn't leave a weak spot and not help to hold up your crown in the soundboard.

Vacuum Line

Raye McCall

From the debut of this column until now, the discussion has centered around the servicing of those players which are currently being manufactured, specifically, Aeolian, Kimball, and Wurlitzer have been discussed. I have talked about some service problems peculiar to each one, but there probably is much more that could be said. It is my desire that the information presented herein be meaningful to those of us in the business of servicing players. Your questions and feedback help me to accomplish that. What unusual or seemingly impossible problems have you encountered? Your questions and/or tips could be shared with others and thus be profitable for all.

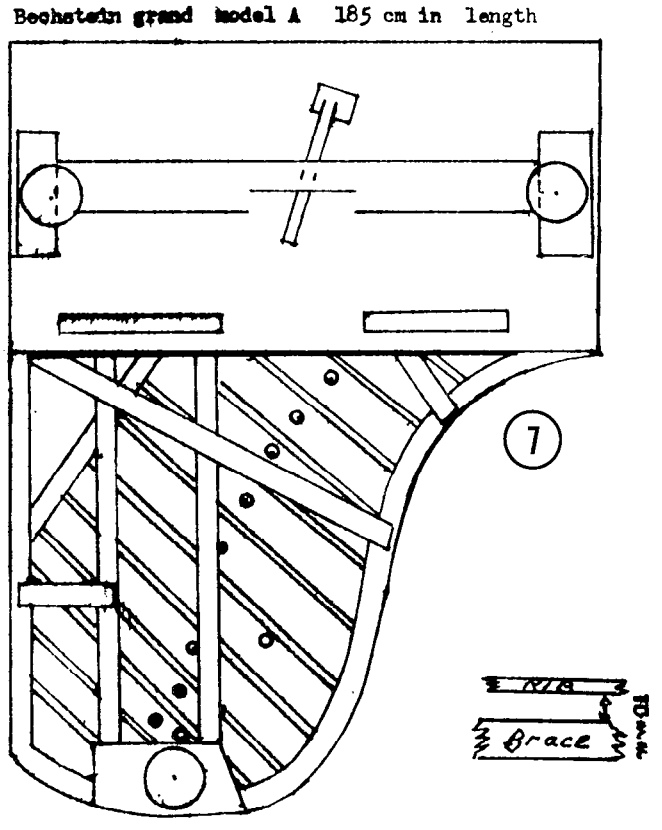
There is one other player mechanism to which we should address ourselves; although it is not so widespread as the above mentioned, there are still some around which do require service. I am referring to units which were manufactured in Japan and shipped to the United States for installation in pianos here.

If you have worked on players for any length of time, you are well aware that there are player actions which are both very well built, as well as those with which the engineers were extremely cost conscious. The player action described in the preceeding paragraph fits into the latter category. A large number of plastic parts were used, the most of which are not replaceable. Should the occasion arise wherein you would find it necessary to service one of these such units, there are several facts which would be helpful for you to know. If you should come upon one which has major problems, you could take one of three possible courses of action: (1) Through your own ingenuity, make the needed repair and keep the player in service for a while

In **photos #4 and #5**, you see an additional board has been put underneath the piano following the long bridge. This board is used to retain (anchor) the expanders we talked about a few paragraphs back. This board is fastened to the inner rim of the piano by machine bolts. The inner rim is machine-threaded to accept the bolts, and it holds quite well.

In **photo #7** we see we can not go to the inner rim with the bolts. So we would bolt to the two big braces crossing the soundboard buttons screwed into the long bridge. The board really doesn't need to be longer than from the third soundboard button down to the hidden sixth soundboard button down. This is where you want to raise the board. In **photos #4 and #5** you see pressure up against where the rib and bridge cross.

(To be continued.)□



longer; (2) Know someone to whom you can turn for assistance; (3) Bear the sad news to the client that their player cannot be repaired. (This last one is not my favorite!)

The transmission has plastic gears, with an electric motor drive, which is reversible for reroll. The motor and transmission are enclosed at the right-hand end of the rollbox. The electric motor frequently gets noisy, and I have found it virtually impossible to locate any replacement motors.

Perhaps now some time should be spent discussing the servicing of the older players. There seems to be quite a number of the oldsters still around. If they have been completely restored, they probably will not need too much service other than tuning and minimum maintenance at frequent, regular intervals. Unfortunately, however, many of them have not been given the complete treatment. Those which have not been totally restored are going to demand more of the technician's time and effort in order to keep them running. (Sometimes that is easier said than done!)

Tuning the older players is usually not too difficult. The cases are larger and therefore access to the tuning pins is easier. Ordinarily my first step is to remove the air motor, although that is not absolutely necessary. The rollbox inhibits your vision of the work area located directly behind it; but looking around it is easier than removing the top action. I am referring now to the old foot pump upright player. As the instruments become more sophisticated (reproducers, nickelodeons, etc.), access to the tuning pins and action becomes more difficult.

Should the removal of the player action be necessary, it will not be at all difficult if a few basics are understood, which will enable you to proceed intelligently. The vacuum supply to the top action is usually at the bass end, so you will find a large tubing connection there. The vacuum supply to the air motor will be found at the treble end. The supply to the air motor must be disconnected before you start to move the top action or stack, whereas the vacuum supply at the bass end will disconnect as the player top action is moved. The next thing to consider will be the linkage connections. If the play-reroll lever is in the front of the keybed, there will be two mechanical linkages to unhook. The one which will lead into the transmission is the play-reroll shift. The other, which is for the tempo indicator, will go into the rollbox. The top action is secured to the case usually by way of one or two large, long screws at each end. The removal of these enables the stack to be lifted out of the piano. If at all possible, slide the stack slightly forward before lifting it out. At the back of the stack there is a row of lifters which engage the whippens. By sliding the assembly forward, a clearance will be made between the lifters and the whippens so that no damage will occur. When replacing the player top action in the piano, careful attention needs to be paid to this area; otherwise parts can be easily broken.

When you have to remove the foot pump assembly from the piano, the minimum number of connections which will need to be severed are the same as for the top action: two pneumatic (tubing at either end); two mechanical (linkage at treble end); and one or two screws in a bracket at the top. If the player has a sustain pneumatic, there will be another tubing connection at the bass end. When you have unhooked everything and are ready to remove this assembly, first give it a *light, easy* pull from the top. This will tell you if everything is free and clear so that you will not bend or break anything. In the event you missed or forgot something, this will let you know so that you may go back and unhook or unfasten whatever it was. The foot pump assembly rests in brackets which are secured to the bottom board of the piano. Therefore the removal is accomplished by rocking it toward you from the top to about a sixty-degree angle and then carefully lifting it out.

Both of the player assemblies can be a bit heavy, so get a firm hold in the proper places. Do NOT attempt to lift out the top action by gripping the rollbox. One hand on the rollbox is all right, but the main lift should come from the other hand placed under the stack.

In the next article I will attempt to answer some questions which I have just received. I look forward to your questions, responses and feedback regarding our topics of discussion.

OBITUARIES

Charles P. Hegenauer
South Florida Chapter

Elmer Whitby, Sr.
Paducah and Little Egypt Chapters

Amplifications and Clarifications

In the October 1979 issue of The Journal appeared an article entitled "Key Weighting." One co-author was incorrectly identified as Marvin Shell. Please note that the authors are Clarence Stout and Marvin Snell of the Nebraska Chapter.

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THE AUXILIARY EXCHANGE

Luellyn Preuitt

A HAPPY NEW YEAR FROM PRESIDENT JEWELL —

"After spending a delightful three days basking in the warmth of Florida, attending their annual State Convention, and returning home just in time to miss a pre-season snowfall, it is difficult to sit down and concentrate on writing. Following a few cold days left behind by the snow, we have been experiencing beautiful autumn days here in the east. The leaves have changed into brilliant reds and yellows with a smattering of green here and there. Skies have been crystal blue and sunshine warm. But, alas — with reports of cold temperatures in the mid- and northwest regions, I'm afraid 'Ole Man Winter' is on the way and will have settled in to stay a while by the time this reaches you.

"Did you read the list of new members printed in the December Journal? Let's hope we will add even more this new year, and, again see everyone at the twenty-third convention this summer.

"The Philadelphia Convention Auxiliary agenda has gone out to all the Board and most have approved it. Second Vice-President Kathryn was correct when she said we were going to learn about the history of our country and we will be doing this mostly by walking. *Welcome to Where It All Began* is certainly an appropriate theme not only for patriotic interests but of the piano and our own Piano Technicians Guild's beginning. It would take a long list of credits to enumerate those belonging to Phila-

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delphia.

"Another happening during the convention will be the Flea Market. Have you started your items to be sold? Remember — this can be a money-making project for your chapter or for you if you are a member-at-large.

"The talent show was such a success in Minneapolis we have been asked to repeat it. There is a great amount of good talent in our membership, so if you can sing, dance, act, play a musical instrument, do artwork, or have an unusual talent you would be willing to share, please come prepared. It is enjoyable to learn of others' talents. Who would have guessed our immediate past president was such an experience 'Pyana Tooner.'

"I have received a note from Ginger Bryant, our historian, stating her work with the historian's book has come to a standstill. She has very few, if any, pictures of the 1979 Minneapolis convention and would appreciate any pictures or negatives anyone would like to share with all of us. Remember, these books are on display at the national convention and are enjoyed by everyone.

"Not only do we change years this time around, but decades as well. The 1970's were stressful years, with the beginning of the energy shortage, government 'affairs' and monetary fluctuations. The 'experts' predict even more problems in the coming decade. You often hear it said, 'Wonder where it will end?', but this question has been asked many times down through the centuries, and I think the next ten years are going to be very challenging to all of us. In articles and books I have read it is said we may go to 'bartering' as a means of buying power. Our school system may change to community teaching. Our food may change. Some say the wheel is on the way out and air pressure will be our method of conveyance. Those of us who attended the talent show in Minneapolis received a humorous preview of future means of travel by Lu Preuitt in her skitt, 'Backseat Flying.' These same experts say it will be advantageous to be self-employed. To me all this will be interesting. If we follow the advice offered in the December Auxiliary Exchange from Lu, to live, laugh, love, and enjoy health and hapiness, swallowed down with a good portion of Kathryn's recipe, then top it off with Mabel's sharing of joys and sorrows with one another, we will be able, for the next decade, to *COPE*!"

Thank you, Jewell, for an inspiring message.

Corresponding Secretary Agnes Huether has contributed a message for us this month. Before letting you read it, however, your writer must let you know that Agnes has been instrumental in having reprints of the September issue of "Auxiliary Exchange" sent to all honorary life members of the Auxiliary. We hope they are not too perturbed at our carryings-on. Here is Agnes' message:

"Happy New Year! Glucklichs Neusjahr! Bonne Annes! Feliz Navidad! Farewell to the Seven-

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ties, welcome to the Eighties! As we move on toward the Twenty-First Century (just a score away!) we are disposed to look back and assess the past in order to improve the present and enhance the future. With confidence in our energy and potential, and the good will of all our colleagues, we'll meet each future challenge with optimism, despite the foreboding gloom of inflation, nuclear fission, and atmospheric pollution. It's the rare publication that does not have some sort of a 'recap' of events in their December or January issues. Why not the Auxiliary Exchange?

"In random recollections the following come to mind. The presentation made by Pauline Miller and travel associates, who entertained us with commentaries on Japan, its customs and costumes; the 'Become Better Acquainted' catch phrase of Helen Pearson with the concomitant logo, the bumblebee. Recall the realistic beehive created by Millie Hooker for our '78 luncheon? How about our fun trip to America's 'soap city' where we toured Ivoryton at the Cincinnati convention! Big 'D' was another never-to-be-forgotten event. With the assistance of Virginia Seller, we sang melodies from '*Camelot*'; heralded Ginny Russell's colossal cook book project; adopted Kathryn Snyder's proposal of a Sunshine Committee which was implemented by Barbara Gold and her five person team.Then there were the lucky ones who found bargains at Neiman Marcus!

"How about our New York convention — way back — when Eleanor Ford and her assistants squired us to the Empire State building roof and the film 'The New York Experience'? We've missed seeing Millie Berman of late, but recall how she greeted one and all who attended conventions at Denver, St. Louis, and Hollywood-By-The-Sea? Marion Damon and Mabel Hiatt have been dedicated 'Sunshiners,' and our Dessie Cheatham has been a trusty treasurer. Thank heaven for skilled needleworkers like Margaret Frazer, who completed the grand piano quilt in '79. If I did not have a deadline and a fuzzy memory, I could go on and on. For folks with feeble recollections like me I would wish for an Arlene Grimley in my future so that in 1990 I might review the decade of the Elegant Eighties."

Agnes' memory is not all that "fuzzy," is it? She reminded us of many happy memories, which leads us to the inescapable conclusion that we must be forever busy creating the events which will lead to tomorrow's happy memories.

Your writer attended the Central West Regional Seminar, hosted by the Kansas City Chapter of the Guild, at the Holiday Inn KCI over the weekend of November 9-11. We were in the midst of American Royal festivities here in the "Heart of America," and FFA members were much in evidence throughout the area. Nevertheless, we managed to hold a successful meeting of piano technicians. Guild President Bob Russell was in attendance and we enjoyed having him with us. Sorry Ginny could not make it, but we know she is a very busy person.

The spouses program was arranged by your writer, and included a shopping trip to Metro North, one of our newer shopping centers in the north area, then a gathering on Saturday afternoon for two activities. First, we each had our handwriting analyzed by a gentleman who specializes in this art. He did not have the time to go into great detail, nor was this the intention of the progam. It was strictly for fun! Although most of the ladies (and our one gentleman guest) present agreed that his analysis of her or his character was, in the main, correct.

After that, we viewed slides presented by Mr. and Mrs. Robert Pearles of the Chelsea Flower Show in London, along with some slides of Royal National Rose Society rose shows. The Pearles are expert rose growers, along with Central West Regional Vice President Ernie Preuitt, and we appreciate their consenting to bring their camera expertise for our entertainment. On Saturday evening we all attended the banquet, where we listened to a flute-and-guitar duo from William Jewel College in Liberty, Missouri, and a piano solo by Joyce Berg, wife of the president of the Kansas City Chapter, Steve Berg. It was a small, but for the most part, enthusiastic group of ladies who attended.

Norma Lamb, of the Los Angeles auxiliary, submitted many items for the "Food For Thought" section of the new Auxiliary EASY DOES IT Idea Book. In looking through that section, this writer decided to use the contribution titled "NEW YEAR'S PUNCH" on page 129. Norma says it was written by L. McNatt, and it is as follows:

Take yourself; peel off layers of egotism and self-pity. Cut out seeds of unkind thoughts and unhappy emotions. Remove all prejudice and worries, and to this add one firm belief that life is worth living.

Mix well.

dSeason with a sense of humor and optimism. Sweeten with love. Add one strong determination to live at your highest every hour of every day,

Come what may.

Garnish with a smile and pleasant words. Serve with gentleness and courage.

Note the effect.

Your writer has not as yet contributed anything personally to this column. It makes her feel happy and sad at the same time. Happy that so many have given their talent and time. That is the most importat. Forget the sad.

She will ask you just one question. For the rest of your life, will you complain because rose bushes have thorns, or will you rejoice because thorn bushes have roses?□

Your Security Blanket

Eloise Ross,
Sunset Insurance Associates

Isn't it exciting? The beginning of another decade: the 1980's! What a resonant ring resounds in the saying; what expectant, positive, stimulating visions in the thought.

Eleven years ago we established the Accidental Death & Dismemberment insurance contract for Piano Technicians Guild members.

Many of the **original** participants are still on the plan. Paul Cheatham was one of the first to enroll, and his was the last claim paid.

The contract renewal date is February 1, 1980. We have confirmation of continuation of the plan as established and at present rates, one of the **lowest** in the industry. If you remember, there has been only **one** slight increase in premium (1976). Statements will be mailed to all insureds in January.

How about YOU! If you haven't this valuable protection for yourself and/or family, now is your chance.

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6. type of Plan (Check One) ☐ Individual ☐ Family

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New York Chapter

DENNIS, JOSEPH C.
2704 Westminster
Dallas, TX 75205
Dallas Chapter

DOWSETT, JAMES S.
P.O. Box 1387
Hendersonville, NC 28739
Western North Carolina Chapter

ERICKSON, RICHARD L.
Janes Trailer Court
Spart, WI 54656
Minnesota-North Iowa Chapter

FLEMING, JOHN
2622 Birch Cres.
Mississauga, Ont. Canada L5J 4H1
Toronto Chapter

FORD II, JOHN
304 E. 85th St.
New York, NY 10028
New York Chapter

GENTA, LUCINDA J.
1609 Valley Rd.
Champaign, IL 61820
Central Illinois Chapter

HILL, PAUL K.
3715 Bowie
Odessa, TX 79762
Member-at-Large

KERKER, JOEL L.
4 Hillscrest Drive
Potsdam, NY 13676
Syracuse Chapter

McCULLEY, TERRENCE G.
1325 W. 5th, Apt. 7
Springfield, IL 62703
Central Illinois Chapter

McNULTY, COLIN V.
303 Frontenac Avenue, Apt. 3
Oshawa, Ont. Canada L1J 2A7
Toronto Chapter

MOORE, ROBERT J.
2149 Gerrard St. East
Toronto, Ont. Canada M4E 2C1
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SHANK, C. DEAN
2101 Burton Dr., #1001
Austin, TX 78741
Austin Chapter

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Nepean, Ont. Canada K2B 8E9
Toronto Chapter

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Toronto Chapter

PHILP, DALE C.
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Toronto Chapter

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Toronto Chapter

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Portland Chapter

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Santa Barbara Chapter

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Registered Technician

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Connecticut Chapter

ROSENFELD, RICHARD
New York City Chapter

STRICK, KENNETH L.
Connecticut Chapter

WALKTER, DONALD T.
South Bay Chapter

Apprentice

BRYANT, KEN L.
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GILLIES, BRUCE N.
Los Angeles Chapter

Associate

CORSON, BRENT L.
Modesto Chapter

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Send check or money order (U.S. funds), made payable to the Piano Technicians Guild, to Classified Ads, THE JOURNAL, 113 Dexter Avenue North, Seattle, WA 98109.

HELP WANTED

TUNER-TECHNICIAN NEEDED — March 1, 1980. Piano tuner/technician, salary commensurate with qualifications. Substantial professional concert tuning experience, knowledge of factory voicing and regulation procedures of Steinway and other manufacturers essential. Ability in restringing and other structural rebuilding desirable. Evidence of training from a leading manufacturer or master technician will be considered important. Duties: tuning, tone regulation and mechanical regulation to factory specifications, provide some structural repair for pianos in the University of Texas Department of Music. Advise the chairman on parts inventories for repair of instruments and provide activity reports. The total work week is 40 hours, some of which must be done at irregular hours. Initial inquiries with curriculum vitae and names and addresses of three persons who may be asked for reference, and have credentials sent to: **Dr. Fiora Contino, Chairman, Department of Music, University of Texas, Austin, TX 78712**

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PIANOS FOR SALE — Always on hand, 150 to 300 uprights! Plain case, art case and players. Also 50 to 150 grands at all times, as is or rebuilt. Excellent brand names — no junk! All set up for inspection. Lowest possible prices. Call for quotes: **Owen Piano Wholesalers, 2152 West Washington Blvd., Los Angeles CA 90018. Telephone (213) 693-9643**

FOR SALE — Several hundred Ampico rolls for sale by the box. Minimum order of 50 rolls. List available upon request. Some are real collector's items. $2.75 each. **Hall Piano Co., 709 David Drive, Metairie, LA 70003**

MISCELLANEOUS

WANTED — An action for a Steinway B Grand Piano. Also need key blocks, fall board, music rack and key strip. Contact: **Henri's Music Co., PO Box 3589, Green Bay, WI 54303. Ask for Barry or Dave (414) 494-4724**

KEY RECOVERING MACHINE—Build your own precision key recovering machine from stock machine parts. Demonstrated 1978 California convention and Pacific Northwest 1979. Send $10.00 p.p. for acccurate machine drawing instructions, photos, to: **Solenberger Piano Service, 1551 Lynn Court, Santa Rosa CA 95405**

TUNERDATA: (1) Mail reminders make money for you; (2) geographical files make money for you; (3) we'll do them both for you. Write **Ed Fesler, 11315 Rich Circle, Minneapolis MN 55437**

CASH PAID for used Steinway action parts; Chickering and Mason & Hamlin screw stringer parts. Send sample of discards for payment estimate to **Janson Piano Co., 299 Queen St. W. Room 200, Toronto, Ontario, Canada M5V 1Z9**

WANTED— Oslund key covering equipment. Also interested in back issues of PTG JOURNAL, books on tuning and rebuilding, ivorine or ivory of different shades and any written material for a tuner who loves his work and wants to know more. **Call collect (303) 571-5669. Ask for Bill.**

WANTED TO BUY — Mason & Hamlin Grand Piano. Want one that was a player. I have a player mechanism to install. Will pay handsome reward. **Brady, 4609 Crankbrook, Indianapolis IN 46250. (317) 259-4305, after 5 p.m. (317) 849-1469**

It has come to our attention that the official Guild logo and emblem are being used by people who are not craftsmen members of the Piano Technicians Guild.

It is extremely important to know that this emblem is officially registered and is the protected trademark of the Piano Technicians Guild, Inc.

It cannot be used by any individual or firm unless they are fully qualified and accredited by this guild through proper competence testing procedures. Any illegal use of this emblem should be reported to the home office immediately for proper action.

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PIANO TECHNICIANS GUILD

JANUARY 1980 UPDATE

NEW MEMBERSHIP CARDS...

Beginning January 1, 1980, all members will receive a new ANNUAL membership card which shows the year of paid membership in the Guild.

When a member has paid all current dues to the home office, a 1980 card will be issued to indicate that the member is in good standing with dues paid. A new card will be issued each year upon receipt of dues.

The old plastic membership card is no longer being issued and is considered outdated as of January 1st. Members who make partial payments on their annual dues will only receive their 1980 cards when the final payments have been made.

AND CERTIFICATES

The final set of engraved membership certificates for Registered Technicians who paid 1979 dues has been completed.

When full payment of 1980 dues is received by the home office, a gold seal with the date, 1980, will be issued with the new 1980 annual membership card. The seal should be placed over the 1979 date on the certificate to indicate that the member is in good standing for 1980.

New Registered Technicians will receive 1980 engraved certificates with their annual membership cards when all 1980 Guild dues have been paid.

If you were supposed to have received an engraved 1979 certificate but didn't, please contact the home office.

MAILING INFORMATION

Early in December a large packet was mailed to each member containing the following:

1. A copy of the Membership Services Handbook.
2. New price list for Guild sales and supplies.
3. Revised Bylaws, Regulations and Codes of the Guild.

All Registered Technicians, Apprentices and Allied Tradesmen also received:

4. Billing for 1980 Guild dues with return addressed envelope.
5. Explanation (orange paper) of new dues procedures for these classifications and special fee for reinstatement after a member is dropped for nonpayment of dues.

IF YOU HAVE NOT RECEIVED YOUR PACKET, PLEASE WRITE OR CALL THE HOME OFFICE IMMEDIATELY.

Old Magazines?

THE PIANO TECHNICIANS JOURNAL enters its 23rd year of publication with this issue. We are interested in obtaining back copies of The Journal, as well as its two parent magazines, THE TUNERS JOURNAL and THE PIANO TECHNICIAN. If you have copies to spare, please contact the home office.

The JOYS of Rock Concert Tuning

Those of you who are really into the delightful world of masochism should try tuning for a rock concert sometime. It's a sufficiently painful experience that it may be said to roughly equal the delights of being captured by the Viet Cong.

It can hit you unexpectedly. There you are, minding your own business, when the phone rings. A seductive female voice wants to know whether she is speaking to Mr. Krefting. The inflection implies something akin to awe, as though she meant THE Mr. Krefting. The ego inflates instantly under proper stimuli, and I, of course, fell for it completely. Searching my mind for a clever response, I came up with a brilliant, "Yes, that's me."

She acted thrilled beyond measure, cooing and gurgling about how fortunate she was to have reached me, and how all of the best technicians in Cleveland had recommended me. I wondered who my benefactors were.

Now I'm old enough to be able to see a big shovel at work, one would think. I have successfully resisted the best efforts of energy consultants, magazine salesmen, Moonies, nuns selling cemetery lots, and even old friends carrying briefcases who presume upon old friendships by trying to hustle insurance policies.

But this was different. This poor girl sounded so desperate and helpless, and to hear her tell it, I was the only person on earth who could relieve her anxiety. I was needed to do a tuning at the last minute on a Sunday evening.

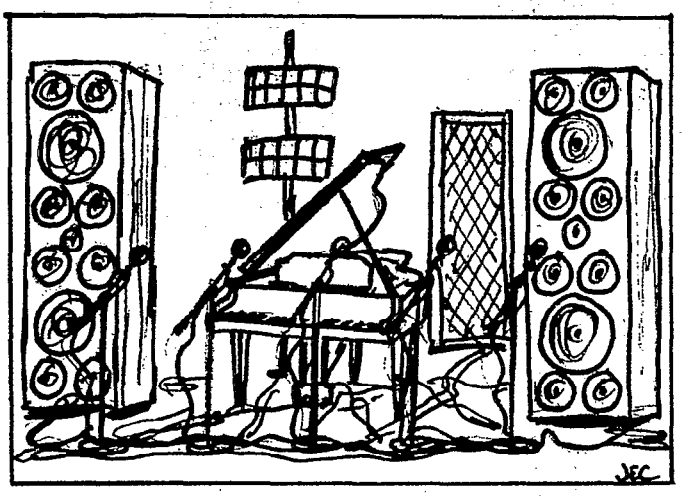
"Sunday is my day off, and I have plans for this evening," I said lamely, knowing it wouldn't work. "We'll pay double your standard fee, plus standby," she said.

"Whatta 'ya mean, standby?" I demanded suspiciously. "This isn't a rock concert, is it?"

"Well, yes, but a tuning is a tuning," she said, adding that I would have as much time as I needed without noise or interruption. Like a dummy, I believed her. What the hell, I thought, it's an easy $100 or more with standby.

When I got to the concert hall there was already a line in front of the box office that stretched halfway around the block. I had a tough time getting in at all, because three oversized adolescents who were guarding the door didn't believe I belonged there. I showed them a Guild membership card, driver's license, Shell Lifetime Credit Card, Social Security ID and pictures of my wife and kids. I finally got in with my Pepsi Generation card.

The tuning was a nightmare, of course. The piano was surrounded by a veritable mountain of loudspeakers, each one of which was checked for feedback while I was tuning. Sure enough, they all had some. I guess the guy that checked them was satisfied, because eventually he stopped.



Electronic pickup devices were taped all over the plate, mostly in my way, and wierd looking characters in T-shirts kept testing various electronic devices to keep me from being bored with my job. There were microphones everywhere, and the sheer number and length of the power cords was staggering to behold. I wondered idly whether they all led to one giant plug, and what would happen if that plug were pulled out of the wall at a crucial moment during the performance. I suspected that the concert could not continue without the

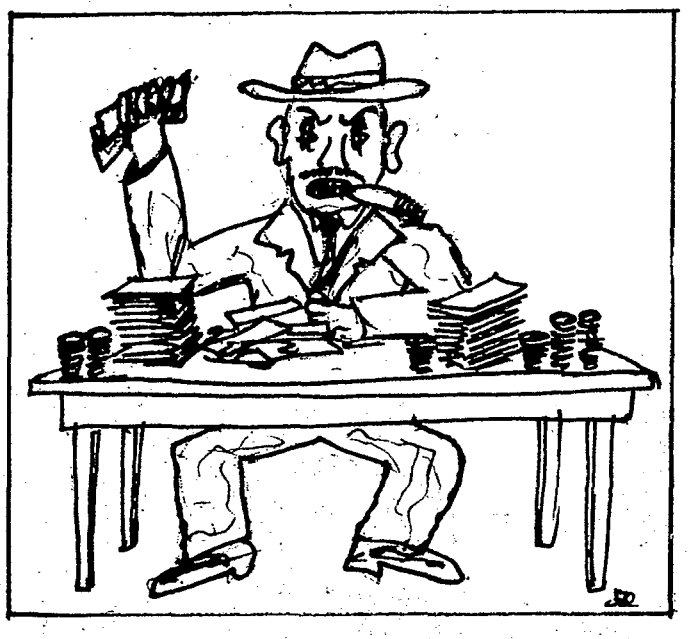
ear-splitting amplification that is used to mask gross deficiencies in musicianship, but I didn't say so out loud.

Finally, I finished the tuning -- or else gave up on it, I don't remember which. A grubby group of T-shirted guitarists emerged from the wings, trailing more black cords behind them, and we were ready for the "sound test." This was a ritualistic assault on the eardrums of anyone within a quarter-mile of the auditorium. All of the performers turned their amplifiers up well beyond the threshold of pain and pretended to listen to each other critically.

Even with hands clapped tightly over my ears, I could feel the calluses growing on my eardrums. The performers, who were far closer to the loudspeakers than I, didn't appear to be in pain. They didn't look like masochists, at least in the sense of your average whip carrying pain lover; so I had to assume they were nearly deaf.

The pianist was more sensitive than the others, breaking only two strings, one jack and one hammershank during the sound test. I had to make the repairs while the audience poured into the hall, because it was almost time for the performance to begin. As it turned out, I had plenty of time because the gentlemen had to put on all their makeup.

The performance began as blastingly loud as the sound test, and by intermission time I had invested several hours of my time in the project. After replacing one whippen and one more string, I touched up the tuning and went to collect my pay. The lovely girl who had called me was not so charming this time, now that the job was done. "Over there, in the back room," she snapped with an impatient shake of the head, "See Mike, he'll pay you."



I went to the room, expecting Mike to be another young man in a T-shirt. What I found was an older man in a wrinkled suit with a huge pile of cash on the table in front of him. He was arguing with two or three of the T-shirts about the amount of some of the bills he was receiving. "That stupid old costume lady wants $200 just for sewing on all the sequins," he grumbled angrily as I walked in, "and the security guards say they get time-and-a-half this time of night."

I felt betrayed. I didn't want to do the tuning in the first place, and now the woman that had promised me a handsome fee was nowhere to be seen.

When the old man saw my bill, he exploded, "You want this much money just to tune a piano?" There was no way to explain to this Neanderthal why my bill was so high, and so we both felt cheated in the end. That was the last time I ever tuned for a rock concert.

-- Jack Krefting, from the Cincinnati Newsletter

Ring the Bell

The September issue of The Journal reported 14 new Registered Technicians members and 10 new Apprentices processed by the home office during the month of July. This number is not significant, but what is remarkable is that most of them all came from the same chapter: the Boston Chapter.

We salute you, Boston, and may your achievement be an example for other chapters to follow.

— Sid Stone, Vice President

Everyone wants a chance to receive the prestigious President's Club award or to sport a Bell Ringers or a Restorers Club ribbon at the annual convention. To insure that every Bell Ringer point is credited to your "account," and that every Restorer of a former member is recognized, the Membership Department requests the following:

1. Please PRINT your name after your signature on the line "recommended by" when you wish to receive credit for bringing a new member into the Guild. Some signatures are difficult to read and we regret having to omit a name for this reason.

2. Please show your own chapter after your name. Some members sponsor a new member into a chapter other than their own.

3. If you wish credit for a RESTORED MEMBER, please write this fact on the application form. It is not always possible to trace a former member after a lapse of time.

4. If corrections should be needed in the records, please notify the Home Office promptly, as The Journal goes to print some weeks ahead of receipt.

The following points are scored for signing up the various ratings:

Craftsman — six points. Apprentice — five points. Allied Tradesman — four points. Associate — three points. Affiliate — two points. Student — one point.

When you have a total of 24 points you become a member of the President's Club; all others are Bell Ringers.

Sponsor a new member and win points in the Bell Ringers Club. Join the celebration at the 1980 convention in Philadelphia.

Bell Ringers Club	Points
ABBOTT, William Jr.	6
ACH, Philip	3
BAIRD, John	18
BAKER, Dean	6
BALIGIAN, Agnooni	16
BARRETT, Bruce	1
BERRY, Ronald	5
BIBLE, Dana	1
BITTINGER, Dick	13
CATE, Allan	1
CLARK, Peter M.	1
CLOPTON, John	4
COLEMAN, Jim, Jr.	1
COX, Merril	1
CROY, Ronald	12
DANIEL, Pat	6
DROST, Michael	18
DRAINE, Robert	23
ERBSMEHL, Charles	1
FISHER, Allen	6
GERLER, Kenneth	1
GILLER, Evan	12
GOETSCH, Lawrence	12
HARMON, Clayton	6
HARRIS, Vaughn	6
HART, W. D.	6
HAWKINS, Marshall	6
HEINDSELMAN, Lois	17
HESS, James	9
HOHF, Robert	6
JOHNS, Barney	1
KAST, Frank	10
KERBER, Walter	12
KOFORD, Lyn	5
LINDEMAN, Doug	23
MACCONAGHY, Henry	6
MACKINNON, Karl	1
MARTIN, Barbara	1
MATTHEWS, John	1
MCANINCH, Daniel	1
MEEHAN, Joseph	18
MEHAFFEY, Francis	11
MOONAN, William	1
PEARLMAN, Sam	1
PERKINS, Robert	6
PETERS, George	12
PHILLIPS, Webb	5
POTTER, Randal F.	5
REITER, Michael	6
RICHARDSON, James	11
RILEY, Martha	1
ROE, Eugene	6
SANDERS, John	6
SEABERN, Paul	4
SCHEER, Bob	6
SCOTT, Dennis	1
SELLER, Marion	10
SERVISS, Kenneth	6
SEVERANCE, Davie	7
SHELL, Roger	6
SMITH, Arthur	1
SNYDER, Cecil	5
SNYDER, Willis	4
SORG, Herbert	6
SPEIR, Leon	6
STONE, Sid	6
SWARTZ, Vern	1
TAYLOR, Kendal	9
UPHAM, Russ	1
WALKUP, Kenneth	6
WHITTING, Ted	4
WICKSELL, Carl	1
WIGENT, Don	6
WILLIS, Aubrey	7
WINTERS, Kenneth	4
WOODS, Edwin	5

President's Club

LILLICO, John 70

Restorers Club

BITTINGER, Dick
HAWKINS, Marshall
SCHEER, Bob

Letters...

To: Don Santy

Workers on salary and wagers are subject to withholding taxs deducted from their pay before they are paid.

We are subjected to an estimated quarterly tax before we earn our pay. If we guess wrong, we are penalized. This is discrimination in its most blatant form.

In the name of 3,000 registered members, why cannot the Guild lobby its elected representatives to reverse this law -- just turn it around. Instead of taxing on what we think we will earn, we pay the tax on what we have already earned in the previous quarter.

The figures would be correct and we would be save the added expense of penalties.

-- Walt Thatcher, St. Louis Chapter

From the Chapter Management Committee...

The effective management of a chapter involves skills which are often new to us. Proper use and delegation of time are essential to good management.

If you find yourself running into difficulties in your own chapter, or are not enjoying the time you spend working for the Guild, then take time to read through parts of the Chapter Management Handbook. There is a lot of valuable advice for each office holder that can help you use your time more efficiently.

December Notice

The special mailing to all chapter presidents in December contained information on Chapter Achievement Awards. Check with your chapter president for information.

New Serviceability Forms Available

New Serviceability Forms are now available from the home office. Be sure to order a supply for your seminar or convention.

Guild Films and Copyrights

Please note that all the films available through the Guild library have been copyrighted.

It is illegal to make duplicate copies of these films, and we request that all members and officers take care to see that the Guild copyrights are respected.

Please bear in mind that films produced by the Guild are FOR CHAPTER USE ONLY. They will only be released to bonafide representatives of functioning chapters since they were designed for that purpose: better chapter programs.

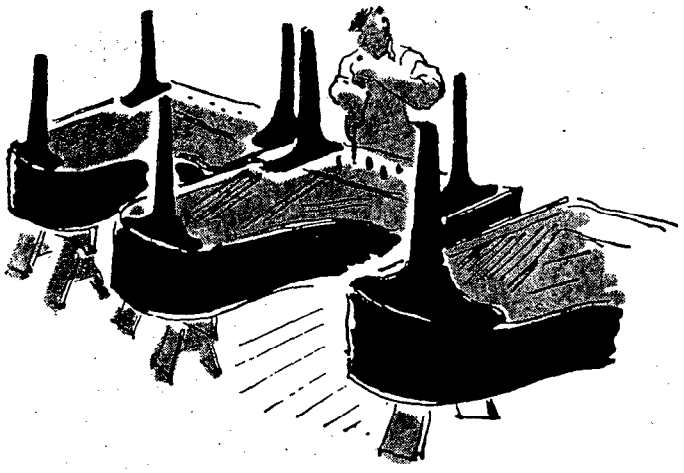
The new films made especially for the Guild library and listed in the new Chapter Services Handbook, have been in constant demand. You will be interested to know that Willis Snyder not only starred as the technician in the new film on bridge repairing, but worked with Ernie Juhn on the production. A master of many trades!

Chapter Notes

Please remember to include the home office on your chapter newsletter mailing list. All newsletters are reviewed by several departments, then forwarded to Journal Technical Editor Jack Krefting who adapts available technical information for his Journal column, The Technical Forum.

From the Salt Lake City Chapter "Salt Tablet"..... There is a new product on the market for the novice piano owner -- it's called the Tensionometer. It is a device with a light affixed to it which glows a constant green as long as the piano stays in tune. The light turns yellow with the first sign of change in the piano, becomes red when tuning can no longer be postponed, and, finally, when the piano is beyond retrieval, it plays Chopin's Funeral March.

From the Denver Chapter.....A November program on aural tuning was followed by an actual hands-on session on brand new Charles Walter pianos.....The chapter was pleased to announce that the University of Colorado Music Department has granted permission for the chapter to use the school's pianos for Guild exams.



Twin Cities Chapter's new method for removing old tuning pins.

Boston Chapter was treated to an enlightening presentation on concert stage preparation by Frank Hanson, who maintains the select instruments of the prestigious Boston Symphony. He had recently completed a 14,000 mile, ten day concert tour and was well versed on meeting the needs of the artist and the piano under varied conditions. As a practical demonstration, Mr. Hanson and Guy Urban, a pianist and former student at the New England Conservatory, portrayed a meeting between tuner and pianist. After the piano was prepared, Mr. Urban performed three pieces to demonstrate a light, fast repetition; long tone and subtle nuance; and rich depth of tone and full piano range.

The Cleveland "Butts and Flanges" newsletter featured a little Christmas jingle we would like to pass along (save for next year's carolling):

Deck the Walls with A-440,
Sight-O-Tuner, Conn and Peterson.
Join the happy throng, Oh Lordy,
Merry Christmas now, and next year fun.

The November meeting of the Los Angeles Chapter featured part two of a slide presentation by Western Regional Vice President Dan Evans. Dan continued his talk about the Guild tour in Europe last summer. Other bits and pieces.....a Christmas gift to the Salvation Army -- new membership rosters -- formation of a committe to serve as official tuning examiners -- where to buy harpsichord parts in Los Angeles -- a report on the 1980 California State Seminar.

William Blees of the St. Louis Chapter attended the Central West REgional Seminar and gave this report....."The seminar in Kansas City this month was for me one of the best I have ever attended. When I first started in this business several years ago, my knowledge of tuning and repairing was limited. After attending the St. Louis seminar in 1978, I thought I was ready to handle almost any job. After attending two more seminars and two more conventions, I'm beginning to wonder how I could have called myself a tuner/technician before. The knowledge gained in the classes and talking to other technicians is absolutely mind-boggling. I don't see how anyone, no matter how good that person thinks he or she is, can say he or she knows it all, and does not see the good in joining the Guild and attend these seminars."

MAGIC KINGDOM CLUB NEWS.....

The Winter issue of the "Disney News" contains a story about Disneyland's new draft horses. Since 1980 marks the park's 25th anniversary, the horses were acquired for special parades. The horses will be pulling a steam calliope.

"Following its time-honored custom of leading crowds to the circus, one of the few steam calliopes available anywhere in the world carried on that tradition when Disneyland opened in 1955. This same vehicle has a claim to fame in England as well as distant points in the U.S. In 1920, it was featured in the Howes Great London Show and in Palmer Brothers Parades in 1921. It attracted crowds through 1926 when it was remodeled and sold to cowboy actor Ken Maynard's Diamond K. Circus in 1936. The historical instrument underwent further refurbishing in 1936 and again for Disneyland's 1955 opening. Recently the calliope's sparkling splendor was restored so that Disneyland's guests might enjoy it in daily parades and private parties throughout 1980."

New package plans and information for 1980 will be sent out soon. Don't forget that Guild members receive special discounts as Magic Kingdom Club members. Disneyland and Disneyworld are terrific places for all us big kids, too.

Orange County Chapter learned an ecological lesson in recycling: how to use packing materials left over from new pianos to repair case scratches.

She talks a good tuning, according to the Indy 440 newsletter of the Indianapolis Chapter.....A tip from the Ginny Russell School of Piano Business Management was printed in the chapter's November newsletter. Seems the Guild's First Lady was teaching a seminar which discussed scheduling. President Bob doesn't cater to last minute tunings anymore, but their son, Bob, is still open to taking one now and then.

While eating dinner, the telephone rang and the caller needed a tuner before an eight o'clock program. Thinking of her son, Ginny mentioned that she could have a technician arrive within the hour, but the cost would be $70. Young Bob could hardly believe it and expressed astonishment at the thought of receiving such a handsome fee for his work. But his sharp-witted mother was quick to point up the wisdom of her ways: "No," she said, "you get $40. I get $30 for arranging the appointment."

The Washington D.C. Chapter had an unusual slide presentation on the soundboard, from tree to piano. The chapter is also holding an all day technical session in January.

From the Connecticut Chapter "Keybed" comes a bit of nostalgia about their activities 25 years ago.....Shortly after the chapter formed, Fred Houston Sr. gave them an A.B. Chase baby grand which had been found upside down in silt in a flooded apartment. The piano became the chapter's first rebuilding project. Needless to say, it was a mess: the action was water logged, it needed new keys and a new damper action, and just about everything else. They cross-dowelled the rim to prevent separation of the laminations; Charlie Stein show them how to scale a new damper guide rail; and the case was ebonized.

For several months the chapter met in two groups to finish it. Dave Cook arranged its sale and took a small upright in trade. The chapter reconditioned the upright in one day at Dave Cook's shop and delivered it that night. While the chapter ate dinner, Dean Howell tuned it.

Featured in the San Francisco Chapter's "In Tune" newsletter.....is a list of members and their specialty preferences. This allows the chapter to refer particular work to a member who likes to do that type of job.....Also in the December issue was an article by Wayne Matley on tuning for artists as opposed to "the average housewife." He pointed out that the phrase is a misnomer, and volunteered examples from his own experiences. He stated that "the average housewife is entitled to all the skill, effort and integrity that the word craftsmanship implies."

The Santa Clara Chapter.....learned a new method of clean an action -- in a box! Member Des Wilson has a specially constructed box large enough to hold a grand or upright action. The box has glove holes on the sides for nozzles, and windows to watch the work in progress. A glass bead blaster does the work without damaging the felt or other parts.

From Great Britain's Pianoforte Tuners' Association newsletter comes this bit of poetry by W. Underwood:

THE WELL TEMPERED TUNER

The note is struck and struck again
Insisting beats with slow refrain
Pass into sounds of music plain.
An interval one fourth below one fifth above,
Gently within the scale we move
The labour delicate but one of love.
Tones reverberate harmonies play
Waves counted out then die away.
A chord is sounded not perfect true
But laws of equal temperament are nothing new.
The octaves ringing loud and clear
Beats sharper now the end in near,
Tested each stage along the way
A third, a fourth, a fifth we play
Harmonies floating up in space
The pins set firmly into place.
Now down to booming bass we go
First unisons then octaves flow.
Discerning bottom notes are hard on ear
The last long rumble then we're clear.
The work complete rewarding praise
"Play a tune" the mistress says.
Melodic chords we strike with pleasure.
Major Minors mingling measure
What more joyous sounds are meant
To us with equal temperament.