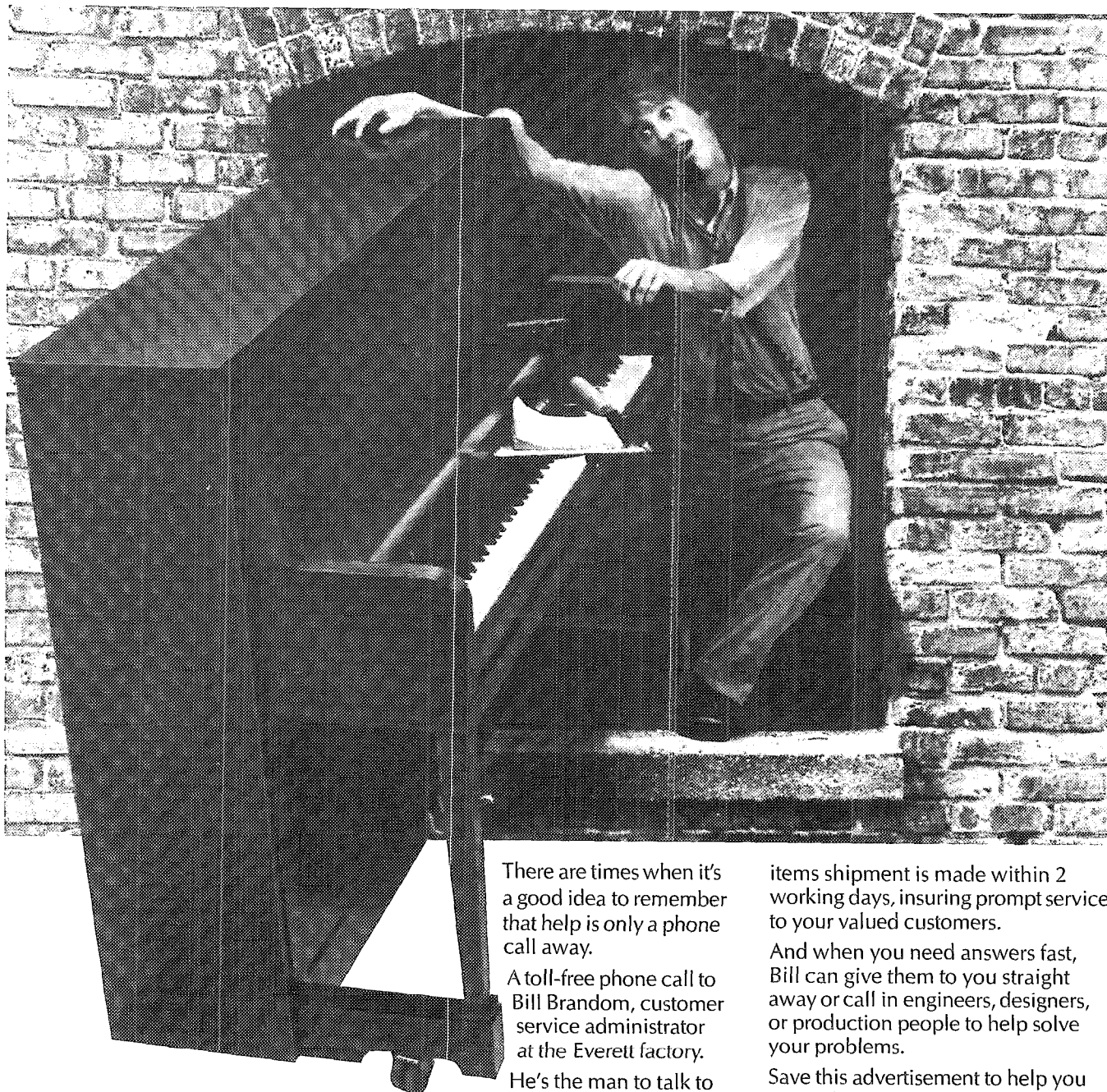


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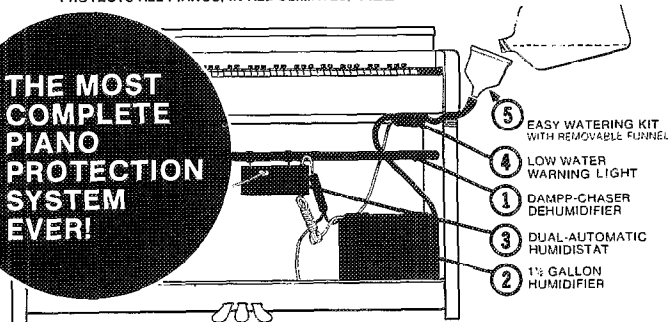
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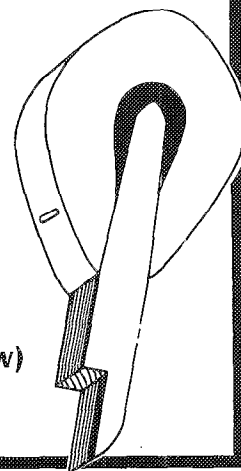
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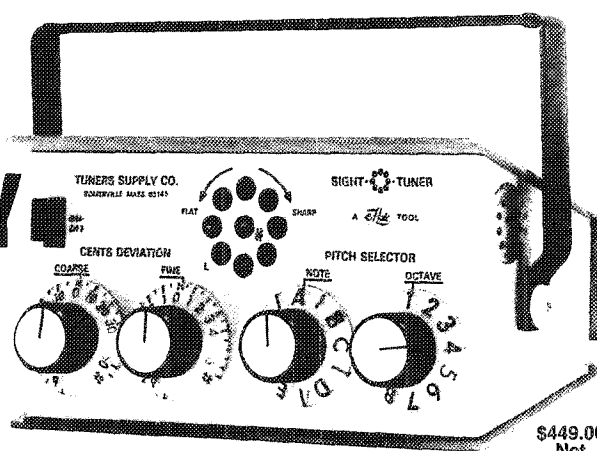
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As might be expected in a busy and viable organization like the Guild there is a great deal of communication between the members of the board on an almost daily basis.

A recent letter to the Board from Secretary/Treasurer Ron Berry carried with it a thought which I find most interesting even though it was only a small portion of the over-all report.

"People of my generation," he reports, "have been nick-named the 'me' generation. It seems to be because there are so many people with the attitude that society owes them something. They are out to take whatever they can get without giving anything in return."

Ron goes on to say, "I see some of this happening in the Guild: The trick is to find the committed *givers* among our group. We must help to instill responsibility to the craft and must uphold our goals and objectives." I'm sure that what Ron is referring to is what is happening in society in general. There seems to be a lessening of the acceptance of personal commitment and responsibility to almost everything.

Perhaps you caught the program "Sixty Minutes" on television recently with the subject of *Coors Brewery* and its fight with the power of organized labor, AFL/CIO. The monopolies in labor have been directing an attack on Coors because Coors' employees did not choose to join their ranks. They have their own "in-house union," so to speak. Under Mike Wallace's relentless and probing investigation it was brought out that Coors employees are perfectly happy with their lot. They have great benefits, good working conditions, high salaries and a happy, contented labor

force. While Coors production is up, its sales are down because of this smear campaign against them. Mr. Wallace brought out very clearly that the AFL/CIO were wrong in every way.

A few days after his appearance on television, Mr. Coors spoke to our Rotary Club. I had the chance to chat with him after the meeting. He turned out to be a fascinating and intelligent person. He speaks without notes or prepared text. Some of the things he had to say were most interesting and they tie in with the theme of this editorial.

In his address he pointed out that our Forefathers drafted a very fine document in the Bill of Rights. What they failed to do, however, was draft a *Bill of Responsibility*. "It seems to me," he said, "That one cannot survive without the other."

He accepts the fact that he has a responsibility to his employees. He also believes that his employees have a responsibility to the company. A basic law of economics is productivity. He feels that productivity falls in direct proportion to the power and control of organized labor. Particularly if that labor organization does not accept its fair share of responsibility towards the welfare of the company.

He pointed out, "Why do the Japanese beat us so badly in the production and sales of automobiles? One reason," he stated, "Is that the Japanese produce twice as many cars as we do at one half the cost."

This may be an unfair assessment in view of the differences in our social order, but Mr. Coors went a step further.

He insisted that he is not anti-labor and his employees will attest to that. He did point out; however, that in Japan Industry, Labor and Government work hand in hand in three-way harmony. In this country they are adversaries.

The thought occurs to me that with all three of these great entities there must have been many, many people who were *committed, dedicated, and determined* to make each of them successful down through the generations. There had to be those who sacrificed and served without the thought of monetary gain or personal grandiosment. Would it have been possible to build these three

powerful forces in our society without these people?

Are kindred virtues no longer considered acceptable in our society? Are people truly out to "grab whatever they can" with as little effort as possible. Witness the courts clogged with trivial litigation over law suits unheard of a few years ago. Witness whole industries going "down the tube" because employees failed to recognize cash flow and resource problems of their employers. Witness labor unions getting disfranchised because of their unreasonable stands, financial institutions going into receivership because of self-serving officers and boards. Industrial complexes out to grab control of the market place and our own government doing its best to drive small businesses into ruin with its regulations and unfair competition.

In spite of all this and regardless of these seemingly insurmountable problems, peeking through the dust are hundreds of thousands of people who believe in and accept the responsibility of some sort of moral and ethical standard which can benefit all alike. These attitudes are the lights that guide our civilization along the way. Those who are willing to do "good" for nothing - or for very little - will protect our society from rot and decay.

Hopefully, the new year will clear away the debris of the past and enable Industry, Labor and Government to confront one another in the spirit of trust, fair play, mutual concern and responsibility.

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PRESIDENT'S MESSAGE



Ernie Preuitt
President

One of the popular expressions of today is the "good news-bad news" pun. Such as, the slave master told the galley slaves the captain was going to give them all they

wanted to eat. The bad news was, that the captain wanted to water ski that evening. Or the good news is, "Yes, they play baseball in heaven." The bad news is, "You're scheduled to pitch next week!" I suppose the "good news-bad news" this month will be that there will be a tremendous exchange of gifts. The good news is that we will all be giving and receiving. The bad news is that someone will have to pay for them.

It really need not be that way, for it should be a time of joy, both of giving and receiving. I have a friend who told me he once was on the verge of refusing a gift from a disadvantaged person, but decided to accept it, as he wanted his friend to experience the joy of giving instead of always being on the receiving end.

At this time of year, many people change their way of life and enjoy a few days of happiness by giving and receiving, then return to their same old routine of everyday life. We, as mem-

bers of the Piano Technicians Guild, should keep in mind giving and receiving three hundred sixty-five days of the year. The same thing should apply to you and your customers. You give to the Guild of your money, thought, actions and the many other talents you may possess. In return you receive all the benefits the organization offers. Those who contribute a little more than required receive so much more. That you have given a little of yourself gives you a deeper feeling of satisfaction with the organization, knowing that others too are going the extra mile.

As for business, the same thing applies. It never hurts to give a little extra. If the piano tunes easily, check the regulation, see that all the screws are tight, and always do a little voicing. Most of all, thank your customer for having you do the work. Whether for business or pleasure, giving and receiving can bring much pleasure to all of us.

Have a good holiday. □



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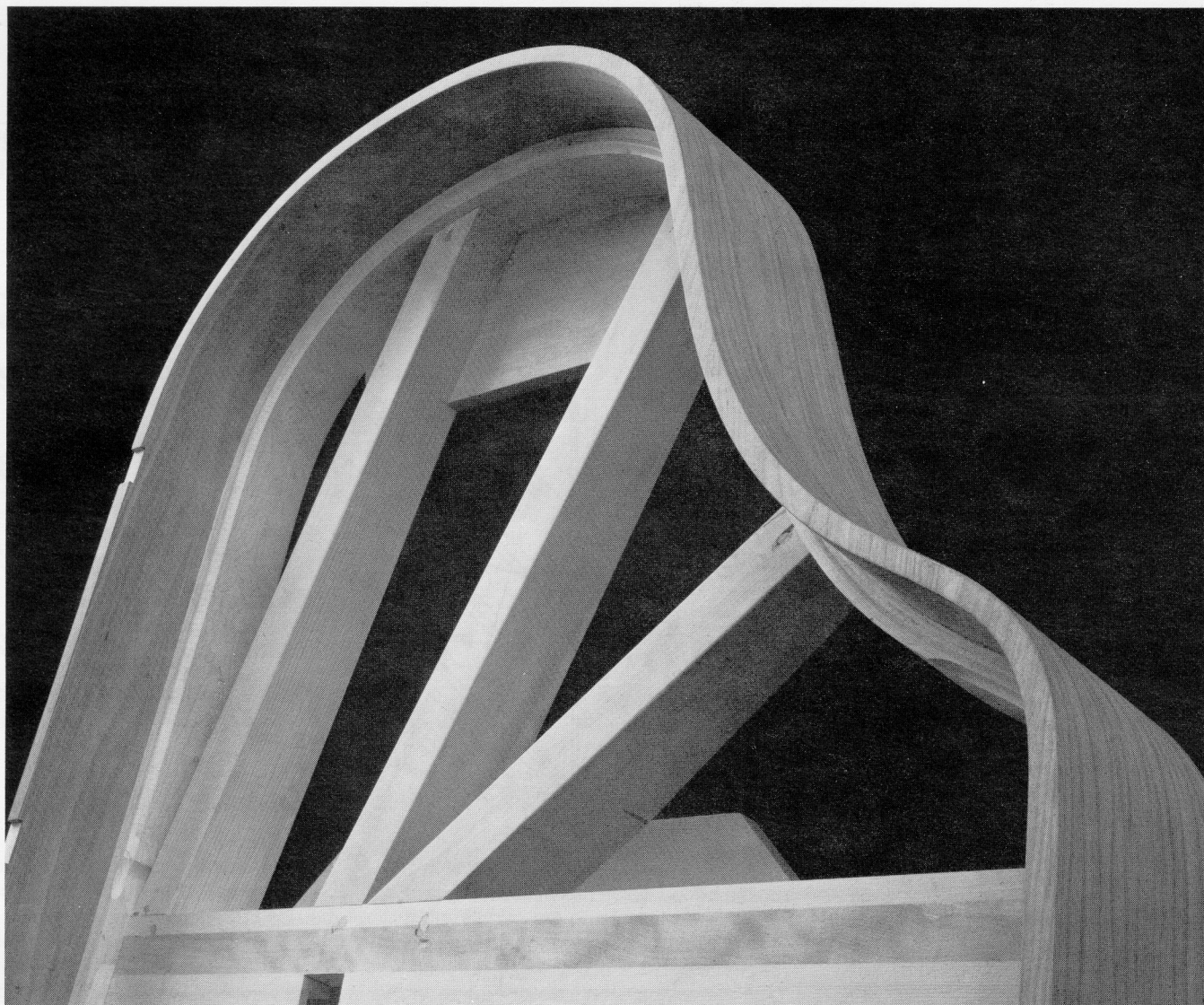
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THE TECHNICAL FORUM

Jack Krefting
Technical Editor

VERTICAL PIANO REBUILDING

It should be understood that this series of articles is not necessarily in chronological order except in a general way—we started with structural repairs to the back and will end with voicing—and that, for convenience or out of necessity, we jump ahead at times. Last month's discussion of pinblock drilling was a case in point; we discussed it then to conclude the pinblock segment, but in practice if we were to do soundboard or bridge work we would wait until those repairs were complete before doing any drilling. For reasons not altogether clear to me, a block becomes jumpy if it isn't pinned soon after drilling.

The repair of a vertical soundboard is just like that of a grand in most respects—wood reacts the same, some crown is needed, etc.—but in a vertical the finished appearance of the rib side must be at least as good as that of the bridge side. Few uprights are worth major repair, let alone replacement of the soundboard; but there are plenty of them with sentimental value, and surprising numbers of people are willing to part with the cash to make Granny's piano sound good again, even if it isn't cost-effective. Anyway, for the sake of completeness we will briefly consider soundboard replacement.

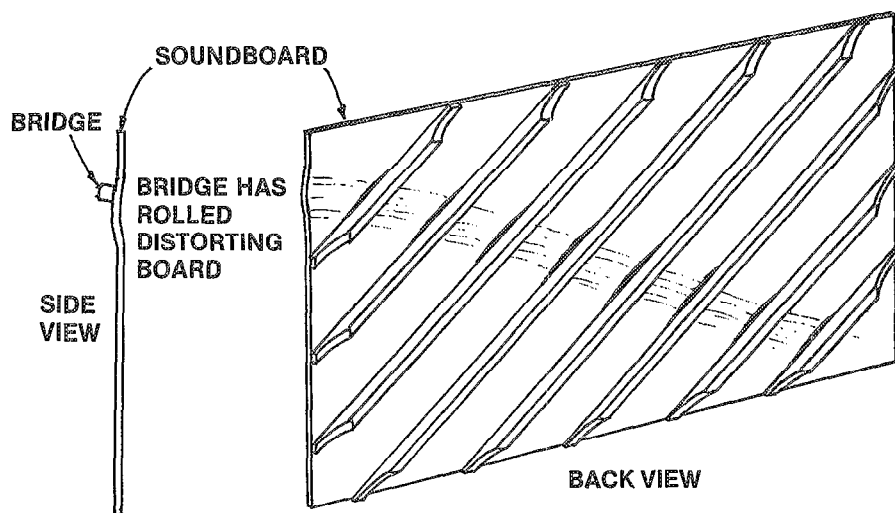


Figure 1

ANY GAP
BETWEEN BOARD
AND THREAD
IN MIDDLE
INDICATES
POSITIVE CROWN

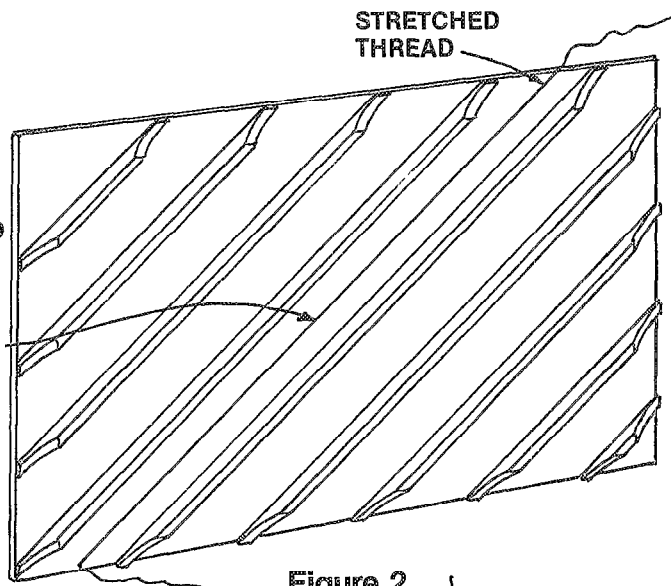


Figure 2

Figure 1 shows a soundboard with a rolled bridge which has pulled the board away from the ribs in the middle, right below the treble bridge. This might be repairable just like any loose rib situation if the ribs aren't distorted into an S-shape, but if they are it will be necessary to replace the board and ribs. Another reason to replace a soundboard would be physical damage from an external source, such as a hole punched into the board by an errant lift truck, or vandalism. If cosmetics are important enough, one might even consider replacing the board because it is

cracked, even though cracks don't seem to appreciably affect the tone if the ribs are tightly glued in place.

The most common reason for replacing a board would be loss of crown. There is just no way to restore it once it has become concave, so far as I know. Questionable tactics like kerfing the bridge or boosting it with valve springs don't fall under the classification of rebuilding, and so will not be considered here.

To check for crown, stretch a thread along the back of the soundboard between the two longest ribs as shown in Figure 2. If there is any gap at all, even paper-thickness, the board still has a crown and is usable from that standpoint. It is usually obvious from the tone of the instrument whether there is adequate crown, because the ring time in the middle and treble will be reduced radically when the crown becomes negative. The tone will be soggy even with new strings and hammers; the board must be replaced, and the time to realize that was before the money had been spent on the other parts. That's the kind of mistake one doesn't repeat.

Let's assume for the moment that we have decided to replace the board but not the bridges. We naturally need to get them off the old board without damaging them, but we also need a means to relocate them accurately on

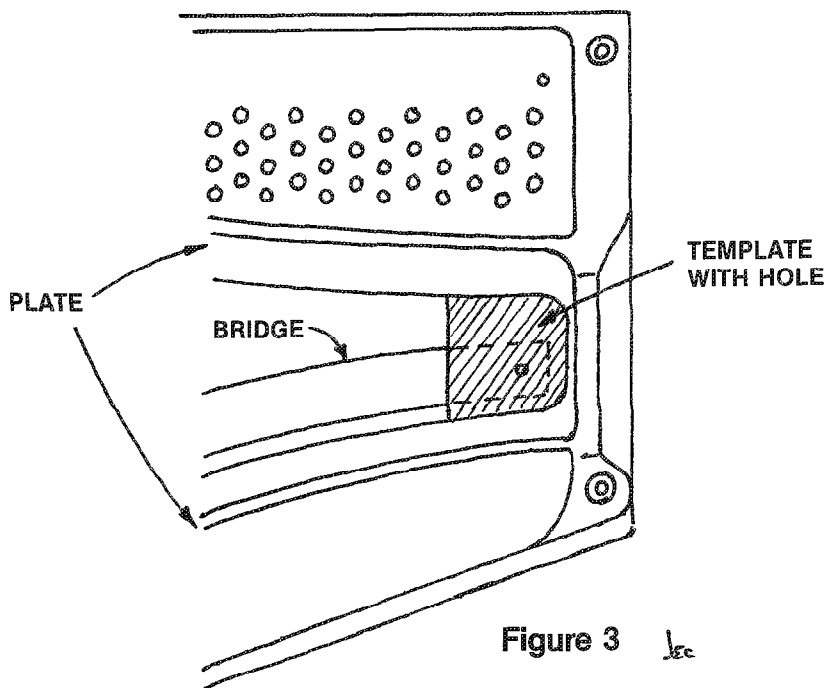


Figure 3 *lec*

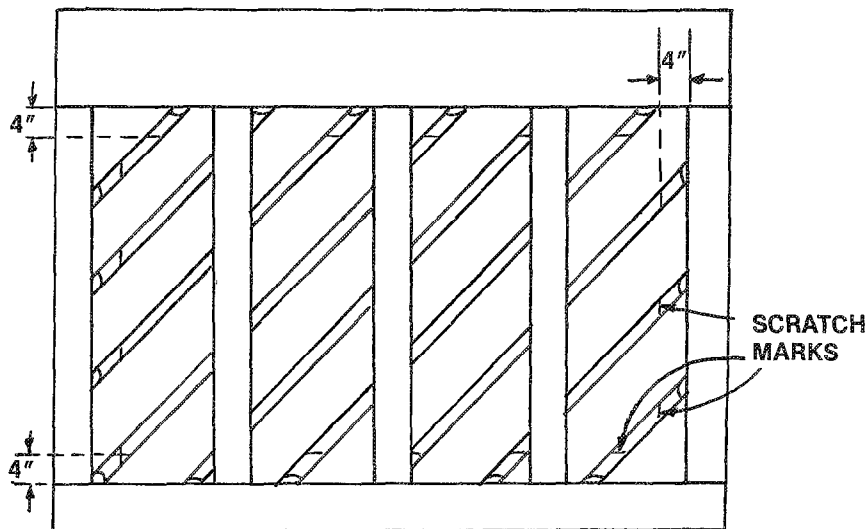


Figure 4 *lec*

the new board. **Figure 3** illustrates a template or locating fixture that uses the plate as a reference point. The plate will have been referenced to the back assembly by tuning pins in tooling holes as we discussed a couple of issues back.

The templates, at least one for each end of each bridge, may be made of wood, plastic (Plexiglas is nice), metal or even stiff pasteboard. With this type, a few bridge pins would have to be removed to allow the template to sit flat on the cap, but other than that it's an easy and accurate method. Drill a hole through the template and into the bridge cap so a pin or nail can be used later to line up the holes. Mark the template appropriately and keep it with other valuable parts and teardown notes from that piano.

It is usually easier to remove the bridges from the board after the board is removed from the back, because then there is no interference from the backposts. Before removing the board, however, make a scratch with a sharp awl on the back of each rib exactly four inches (or six, or whatever is appropriate) from the inside of the liner. This will allow you to duplicate the rib feathering later as we will see. **Figure 4** shows the scratches measured inward from the back frame rather than the liner, but we trust our readers will understand the reason for the difference presently.

When the board has been removed from the liner, we need to scale it to determine the amount of thinning that needs to be done on the new board. I suppose it would be possible to determine this with a giant pair of calipers, but another method is shown in **Figure 5**. Drill a pattern of holes and measure the thickness of the board at each hole. When a change is noted, drill holes closer together and take more frequent measurements. Most boards are not thinned at all in the upper bass corner, so don't be surprised if nothing develops there. Thinning is usually done at the bottom and sometimes along the treble side. Pay particular attention to the scaling at the ends of the treble bridge.

Incidentally, if the old board is laminated it will be the same thickness throughout. If it is the intention of the rebuilder to duplicate this soundboard scale, a new laminated board of identical material and thickness should be purchased. Such a scale could be upgraded with a solid spruce board, but at least two things should be considered:

1. The job then goes beyond the scope of rebuilding and gets into re-

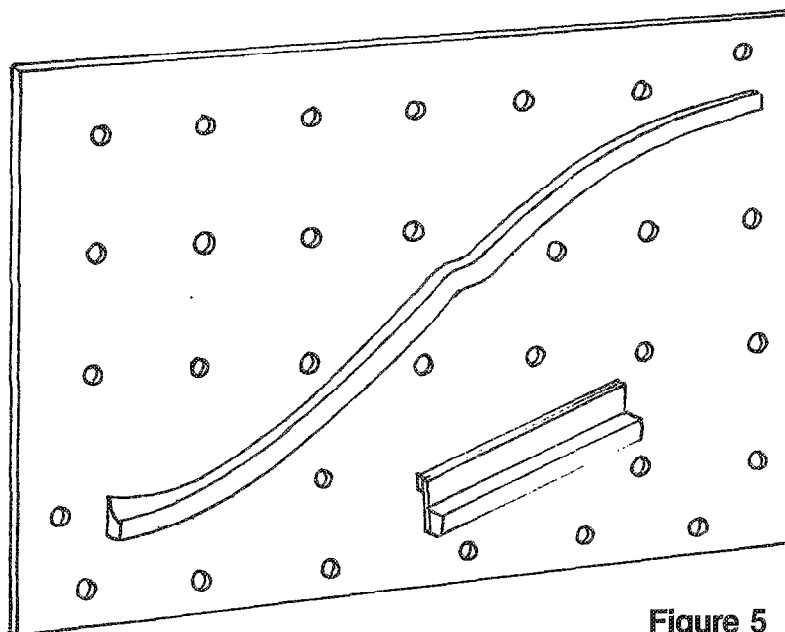
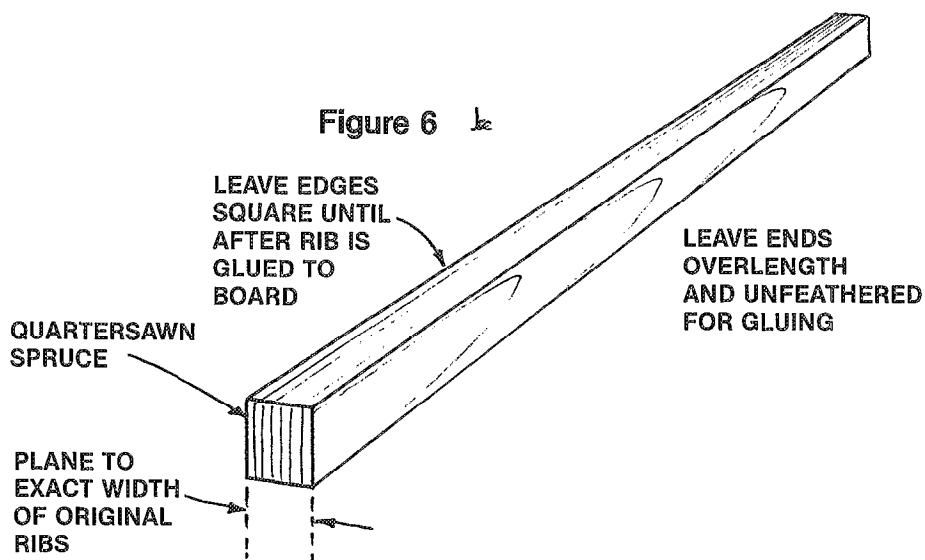


Figure 5 *lec*



designing. The piano will have a different voice with the solid board, probably less brilliant in the treble but richer and fuller in the bass and middle sections. The owner may like the new voice better, but that is not assured.

2. Solid boards are almost always thicker than laminated ones, by as much as $\frac{1}{8}$ " in the middle. Assuming the same amount of crown and the same bridges as used originally, the piano will now have excessive downbearing. If this was the planned outcome, the pinblock will have been made thicker than the original, the action and keybed moved, case parts adjusted, etc. One would also have to guess at the proper scaling, since there would be no thinning pattern to duplicate.

There are numerous materials from which soundboards are made, but spruce is the overwhelming favorite. Among the various species, most rebuilders seem to feel that Sitka spruce is best, followed closely by Eastern spruce. It is probably more important to get a board that is 90° quartersawn throughout, with a consistent twenty or more annual growth rings per inch, than to quibble about the species or whether the tree was grown on the north side of the mountain, or similar small points. Two suppliers are Posey of Washington State and North Hudson of New York. These suppliers can furnish rib stock also, but if a supply of close-grained, clear spruce is available locally that would work also.

If the piano has the potential to be a really fine instrument, the rebuilder might want to go to the trouble of matching ribs. To do so, take thirty or forty pieces of rib stock, all of the same dimension and moisture content, and stand them in a vertical stack on a concrete floor. In turn, pick up each rib and drop it on its end from a height of three or four inches, listening for the frequency

of the sound when the rib hits the floor. Those that match in pitch are best suited to complement one another in the same piano, and those with the highest frequency should be saved for the best piano.

Whether or not the ribs are matched, they should be cut and planed as shown in **Figure 6**. Mark them with appropriate numbers and leave them about four inches longer than the originals for now. The ribs should be dry, and may be kept in the cooker with the soundboard stock, which should be between 4½% and 6% moisture content. In average conditions, 110°F for two weeks should produce the proper moisture content, but there are variables that must be considered. Over-drying of the wood can be destructive and will produce excessive crown, while allowing too much moisture to remain is equally bad. There probably won't be enough crown in the first place, and using crowned ribs and press won't really solve that problem, because sooner or later the board will get dried out and crack.

Figure 7 shows a back which has cutoff bars and inlet ribs, and since there are many uprights around with

one or both of these features we should make an attempt to address the problems involved. Basically, whenever the ribs are notched into the liner or cutoff bars, it is necessary to fit the ribs to the back before fitting them to the board; otherwise, after the ribs are glued to the board, the ribs may not nest into their notches and the technician is forced to fudge something to make the assembly fit.

Clean all the old glue out of the notches and measure their depth; this will be the thickness of the ends of the ribs. Lay the new ribs in the notches, even though their faces will not be flush with the liner because the shallow depth of the notches will not accommodate the full thickness of the unfeathered ribs. Next, take the dried soundboard out of the cooker and lay it in position on the ribs. Working quickly with a sharp pencil or scratch awl, mark the position of each rib on the underside of the board. There will be four marks per rib, two near each end so the ribs can be accurately located on the board in the press. When the board has been so marked, put it back in the cooker so it doesn't pick up too much moisture from the air. A dry board soaks up moisture like a sponge, and until the ribs are glued it is imperative that it be kept dry.

To glue the ribs to the board, piano manufacturers use special presses designed to apply even pressure to all ribs at once. This is practical in a production situation where tooling can be designed for one size board in the anticipation that thousands of identical boards will be produced that way. The rebuilder, by contrast, works on different makes and sizes all the time, so each job is a custom one; in that situation the traditional go-bar deck is the best answer because, while it is cumbersome and time-consuming to use, it can be used for anything. The biggest problem is that, if the shop is not climate-controlled and very dry at the moment, the rebuilder has a maximum

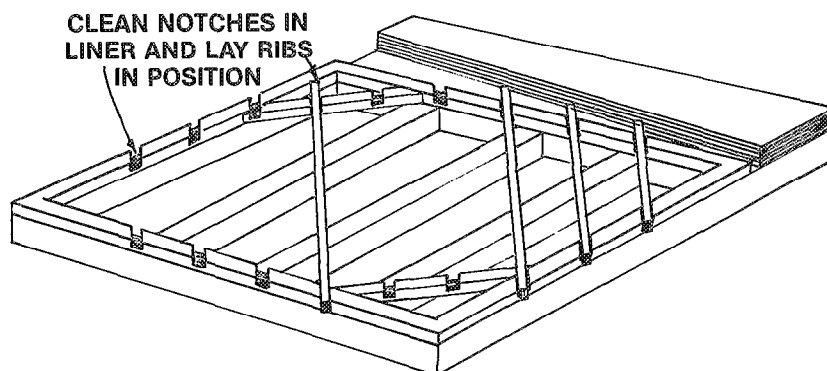
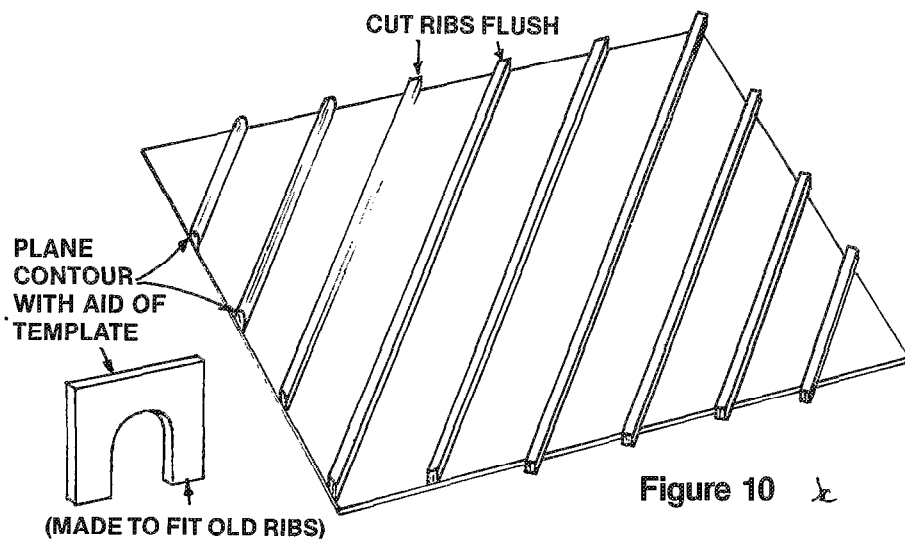
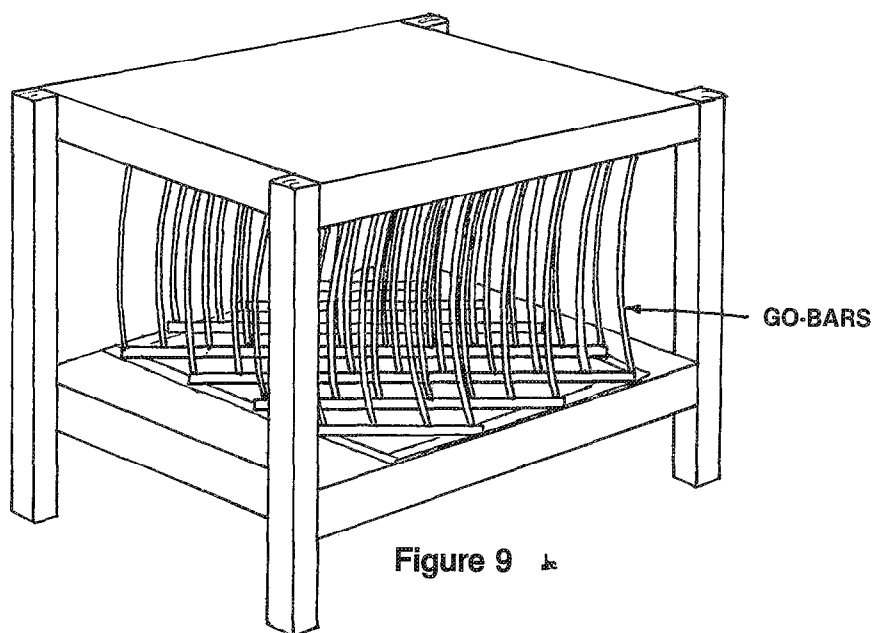
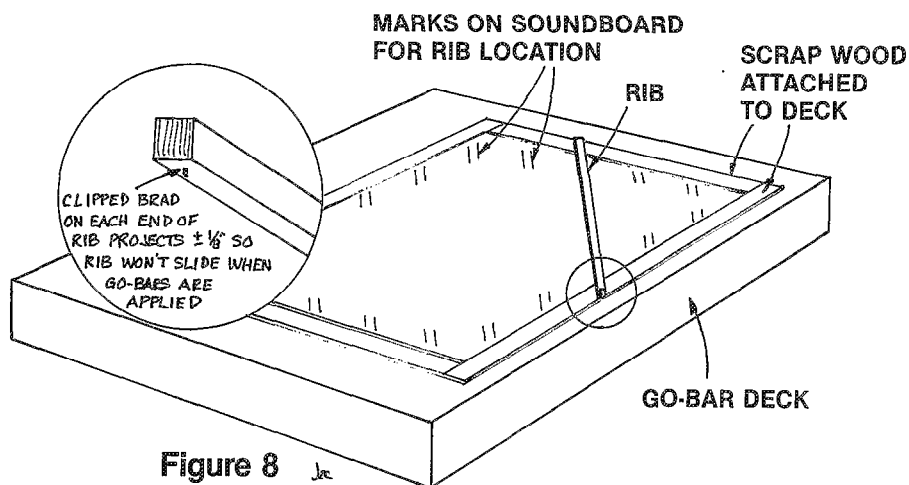


Figure 7



of twelve minutes from the time the board is removed from the cooker to the time all ribs are glued and clamped. It pays to have all go-bars ready, ribs numbered and in order, and a helper or two standing by. If it's your first board, time yourself in a dry run, doing everything except applying glue. If you can make it in nine or ten minutes, so much the better.

Lay the board on the go-bar deck, rib side up so the markings can be seen as in **Figure 8**. Before applying glue, some means must be found to keep the ribs from sliding out of position during clamping. One suggestion would be to drive a brad into each end of each rib and then clip it as shown (**Fig. 8**) so the protruding part will dig into scrap boards around the perimeter of the soundboard. These pieces of scrap wood would be the same thickness or slightly thinner than the board.

When the procedure has been tested and timed, apply glue and get the ribs onto the board as quickly as possible. A simplified version of a go-bar deck is shown in **Figure 9**, although none of the materials are specified. Go-bars are usually made of ash, oak or hickory; the deck may be made of anything so long as it is strong enough.

In **Figure 10** we show the soundboard after it has been removed from the deck. The ribs must now be cut off flush with the edges of the board, and also contoured in cross-section to match the originals. A template of the old rib contour may be made if necessary.

Remember the scratch marks we made on the back side of the old ribs? Well, now is the time to refer to them, because we need to match the original rib feathering pattern. Make a pencil mark on each new rib exactly 4" plus

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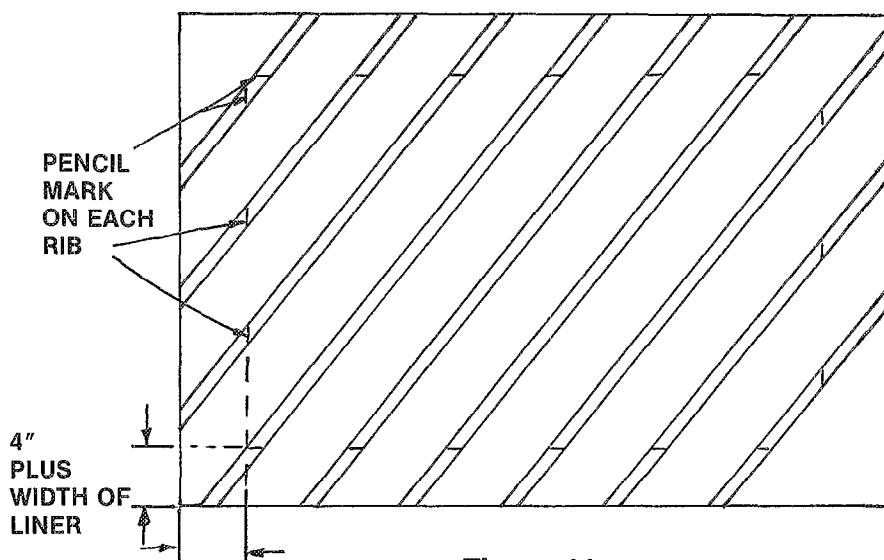


Figure 11

the width of the liner from the end, (see Fig. 11) This should correspond to the scratch marks, and if a careful measurement is made from the old scratch mark to the beginning of the feathering, this can be transferred to the new rib. Use a long-handled wood chisel, very sharp and without mallet or hammer, and feather the ribs. Be careful not to make the ends thinner than the thickness of the liner notches, but remember that they cannot be thicker either. Figure 12 illustrates these points, I hope.

Sand the backside of the board after removing any traces of glue squeeze-out from around the ribs. When the assembly is smooth and free of splinters, mask off the edges with tape so that finishing materials will not detract from the glue joint which attaches the board into the piano. Apply a thin coat of three pound cut white shellac, after testing a sample to be sure it will dry. When the board is dry, rub it with fine abrasive, vacuum, and recoat with shellac; rub again, and flow on a coat of varnish. A good grade of interior varnish is recommended for this rather than a urethane-type finish, as the latter is not compatible with shellac and will lift the grain when used as directed.

When the finish on the back of the board is dry, peel off the masking tape which protected the gluing surface around the edges of the board. Dry-fit it to the liner, being sure that the ribs fit the notches and that the shape of the liner is contoured to the crown on the soundboard. Reshape the liner if necessary, taking care that only the minimum amount of wood is removed. This is important because it could affect bearing as well as the clearance between ribs and backposts. When it fits, glue it in place. Use clamps or go-bars, but be

sure to protect the board's surface from clamp marks.

When the clamps are removed, temporarily lay the plate in place on its tooling pins (discussed in an earlier issue) and place the bridges on the board. Locate them precisely with the template made earlier, and make light scratches on the board to indicate bridge location. Now remove the plate and mark the thinning pattern on the board with a pencil. The thinning pattern was determined, you may recall, from drilling holes (Fig. 5) and measuring the thickness of the board at various points. Carefully plane or sand the board to match the original scale.

Now glue the bridges in place, using go-bars with scrap softwood protecting the top of the bridge cap. The clipped-brad idea to keep the bridges from sliding out of position will work here, too, or one could install screws and soundboard buttons from the back before the go-bars are put in place. In any case, if go-bars are used it is imperative that the ribs be supported from beneath. The easiest method is to place wooden wedges between ribs and backposts. If the excess glue squeeze-out is cleaned off while the glue is wet, a fair amount of time and grief will be saved.

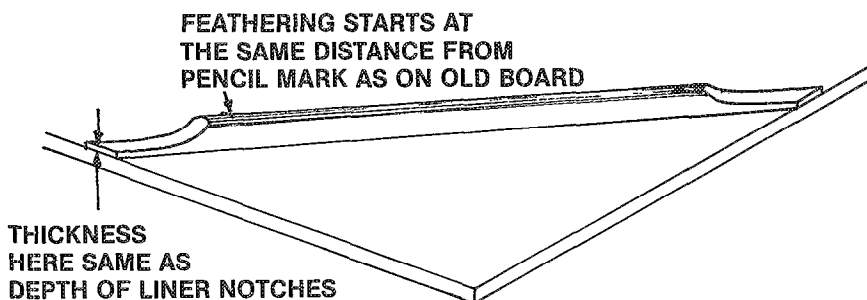


Figure 12

Finally, apply the same finishing materials to the front face of the board as were applied previously to the back side, and the job is done.

BIRDSEYE CLEARANCE

Q Dear Mr. Krefting, "...I've noticed several times when working on flanges (hammer butt, for instance) that the birdseye has quite a bit of room to move side to side between the two sides of the flange, sometimes as much as one thirty-second of an inch. This results in a centerpin that, if cut off even with the sides of the flange when the birdseye is centered will later protrude on one side of the flange and retract into the bushing on the other side of the flange if the birdseye moves off center. I'm concerned that the centerpin might wear the bushing more quickly when this condition exists. Would it be permissible to cut the centerpin deliberately over length so that at no time could either end retract into the bushing?

"On the subject of cutting the centerpin, I know that many technicians use a small file such as a point gap file to file the cut edge down smooth. Personally, I question this practice. Wouldn't filing a centerpin force small iron filings into the bushing cloth which would later contribute to wear? I can attest to the fact that many 60 to 75 year old uprights I've seen did not have filed centerpins and many still have extremely tight centers. Can we not then assume a cut centerpin is not a threat to the bushing as far as wear is concerned?"

—Lance P. Reed
Johnsonville, New York

A On the subject of end play, I suppose it is really a question of degree. Zero end-play is just as bad as excessive end-play, because then the raised rim of the birdseye is bearing firmly against the flange arm all the time. When humidity increases, the friction becomes such a factor that sometimes the note will not function; technicians would tend to ream or shrink such a center, when the

only reliable cure is to increase the clearance between parts by filing some wood away from the inner faces of the flange arms. Never file the sides of the birdseye, as this would increase its surface contact area.

By the same token, excessive end-play should be corrected also, mainly to prevent misalignment of parts due to the side/side movement. The end-play would have to be really serious, worse than any I have ever seen, to present a real problem from the standpoint of premature bushing wear, but on paper it looks possible. Lance's point is illustrated in **Figure 13**.

In my opinion, just how serious a problem this presents is dependent not only on degree, but also on just where in the action a particular center is located. A damper lever flange, for example, could well accommodate considerable end-play without problems, where a jack or hammer flange would be unusable with the same clearance. Granted, a jack flange can't be used anywhere else but on a jack, but other flanges may be interchangeable. If so, and the technician is assembling new parts for a complete rebuild, flanges can be custom-fitted to their mating parts according to side clearance.

I see nothing wrong with cutting the pins a bit overlength to avoid the retraction shown in the drawing, so long as there is clearance between neighboring centerpins. And a cut centerpin should pose no threat of added wear to the bushing, unless the retraction were really severe. Even so, if you check bushing torque resistance, comparing the cut side with the flat or uncut side, I think there would be no appreciable difference. I am opposed to filing the cut

end, not so much because of the contamination from filings as the fact that filing produces an overhanging burr which could damage the bushing and the birdseye if the pin were later pushed out from that end. If one end is flat, uncut and unfiled, and the other end is cut, it is easy for the next technician to tell at a glance or by feel which is which. The pushing tool is placed on the uncut end, and then the burred end doesn't get dragged through the center. As an added precaution, to keep the pushing tool from digging into one side of the birdseye I always push the pin only about $\frac{1}{8}$ " with the pushing tool, and then pull it the rest of the way out with a plier. A cut pin can't be used again anyway, so the plier marks on the pin are of no significance.

READER COMMENT

"In regards to your answer to the question about 'Erratic Blow Distance' in the Journal of August 1982, perhaps there was another problem. On many older uprights there is a rubber or leather covering on the action support bracket, and since it is usually worn quite a bit, one or more could have fallen off, causing the blow distance problem."

—Mark J. Perry, RTT
Minneapolis, Minnesota

"Hereunder my share to your Technical Forum. On the subject of tuning, it is difficult, but I'm rather new in the trade I guess (dozen years). Besides, it looks as if my telephone number has a certain appeal to those with a difficult, bad or hopeless instrument. And if lucky enough to find a reasonable action, the pitch invariably is much too low. This in the long run made me throw all pitch-

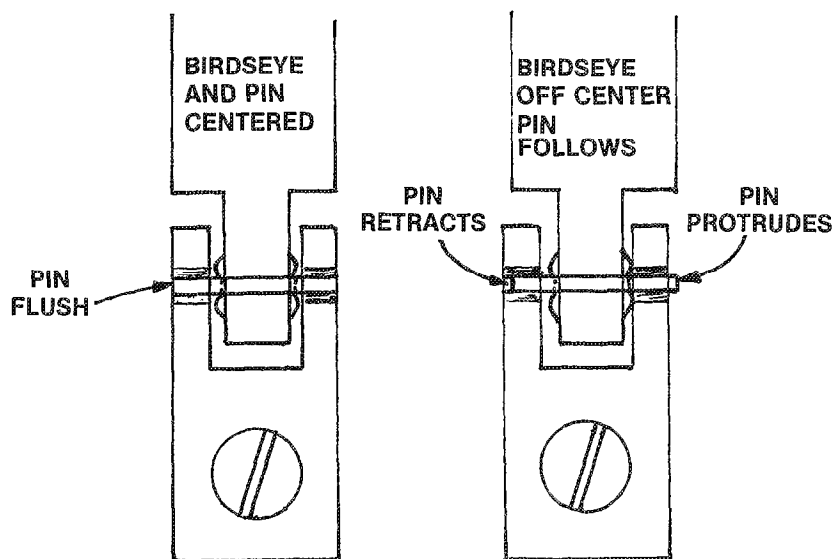


Figure 13 Jz

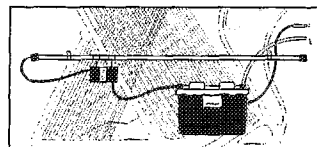
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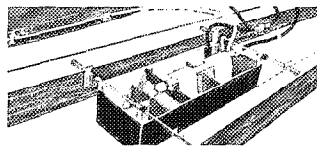
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raising theories overboard, applying the drastic tune-in-one-turn method.

"Start by gradually pushing up at random with the T-lever till it's about slightly too high, a procedure that may take from 15 to 45 minutes, depending on the level encountered. This done, I allow the strings to 'catch their breath', checking the action or obliging the customer that in the meantime has come forth with tea or coffee. Final step is the 'nett-tuning' lasting some two hours, in the course of which many a string will be encountered that has obediently settled itself on the correct pitch. The results are usually very satisfactory, though I make sure to warn the client that the piano may not behave as wished."

—Rene Landes
Amsterdam, Holland

GADGET OF THE MONTH

Gerald F. Foye of San Diego, California, has done it again. This time he has made a simple but effective fixture for winding your own springs, as show in **Figure 14**. Here is Gerald's description:

On occasion you might have to replace a spring, such as a hammer return spring, and you don't have the correct one or it could even be an odd spring no longer available. Here is a simple method of forming a replacement spring. The example shown is the Schwander type which is attached to the butt at one end while the other end is attached to the hammer flange with a string loop. However, the application can be suited to most any configuration using a simple forming fixture and round nose pliers. I use brass Zither wire #7 (.018") and #9 (.022").

1. **FIXTURE BASE:** Wood block about 2" square. Coil pin is bridge pin or any pin close to inside diameter of spring coil. Add tack at location of spring hook to locate and hold.
2. Coiling handle made from wood dowel. Drill hole in approximate center slightly larger than coil pin. Add tack, barely sticking above surface, at outer rim of dowel to guide.
3. Cut wire extra long and form hook with round nose pliers.
4. Lay wire on fixture with hook in tack. **NOTE:** Tack must be in correct place. Locate using original spring if possible. Spring with dowel same number of turns as original and finish at same angle to achieve same approximate tension.
5. Fit and cut tail to suit.

IN CONCLUSION

We are sorry to announce that "Vacuum Line", the excellent series on player piano servicing, is winding down. There will be one more column in a coming issue, although author Raye McCall has promised that he will consider another series on a different topic sometime later. I know I speak for all of us when I say thanks, Raye, for a job well done!

On the brighter side, this month marks the beginning of a new series of photo essays by Martin Tittle of the Detroit-Windsor Chapter. The series will be known as "Step By Step", and I think you're going to like it.

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

Jack Krefting
Technical Editor, PTJ
3802 Narrows Road
Erlanger, KY 41018

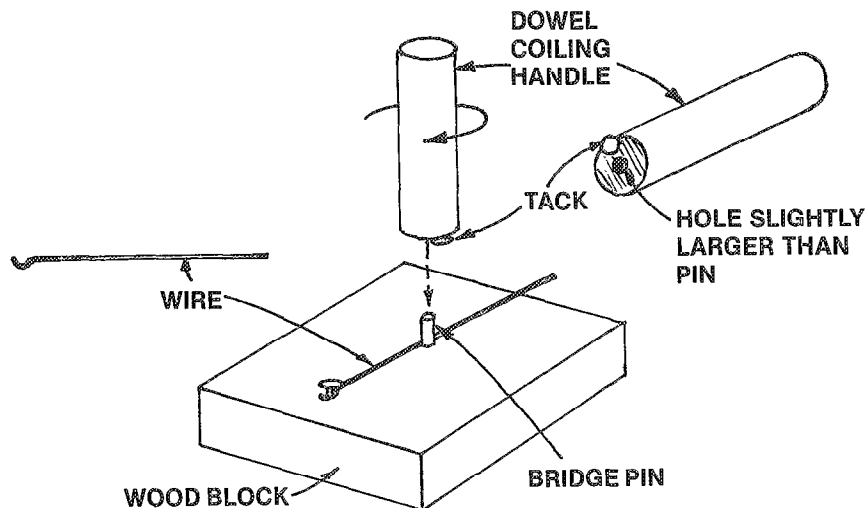


Figure 14 *lx*

THE INTERNATIONAL SCENE

**Fred Odenheimer, Chairman
International Relations
Committee**

Friends Of IAPBT

Perhaps I owe an explanation, since I asked you in the past to join it.

As it stands now IAPBT is open only to an organization and not to individual membership, which means, there are only 2 members at this time, namely PTG and JPTA. This will have to remain so until the meeting in May of 1983 when, we hope, steps will be taken to allow a classification for individual membership.

Naturally this will have to be ratified by each member organization. Until such a time, we will have "Friends of IAPBT", in a way a support organization, to help fulfill the aims of IAPBT. Now what are the aims of IAPBT?

When we think of technicians, we think technical, exchange of technical information, we think of tools, of tuning and repairs. Perhaps somebody some-

where has a different or better idea for a repair. What are the effects of climatic conditions on a piano in different countries. What are the effects on an instrument because of different ways of building a house, apartment, etc. But more important than all the above are the personal ties, the ties of friendship and the good will we create. We may encounter language difficulties but tools are music to the technician and, as you know, music is an international language.

Membership in "Friends of IAPBT" \$15.00, join now.

Price exclusive convention package: approximately **\$2150.00**, includes airplane fare, all hotels, transfers, 13 breakfasts, 9 lunches and 8 dinners.

Convention: \$350.00, includes 4 nights at hotels, 3 lunches and 3 dinners + transportation.

For further information contact **NORTHBRIDGE TRAVEL SERVICE**, 9700 Reseda Blvd., Northridge, CA 91324 Attn. Tova Weltman. Phone: 213-886-2000 or contact Fred Odenheimer, 15358 Wyandotte St., Van Nuys, CA 91406.

There are just 5 1/2 months to go to the international convention in Tokyo and the opportunity to see not only Japan but other important countries and places in the Far East.

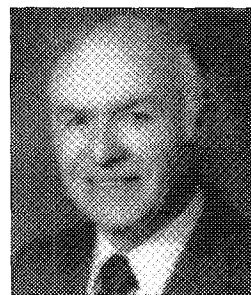
As of this date of writing, early October, we just had word from Australia that there will be a delegation of from 4-10 technicians from there at the conference. This is indeed exciting news.

There were some changes in the planned IAPBT tour and the following is the final program. Places where we stay overnight are bold.

FINAL ITINERARY

May 7, 1983	leave Los Angeles, Pan Am Airlines
May 8	arrive in Tokyo , international participants will join us there.
May 9	Tokyo
May 10	Tokyo
May 11	Tokyo - Kamakura - Hakone - Atami
May 12	Atami - Nagoya - Gifu
May 13	Gifu - Takayama - Kanazawa
May 14	Kanazawa - Eiheiji
May 15	Eiheiji - Kobe
May 16	Kobe - Kurashiki
May 17	Kurashiki
May 18	Kurashiki - Hiroshima
May 19	Hiroshima - Kyoto
May 20	Kyoto
May 21	Kyoto
May 22	Kyoto - Tokyo
May 22	evening IAPBT Board meeting
May 23	Tokyo , Council and Technical meetings. non-participants, tour of the city.
May 24	Tokyo to Hamamatsu , afternoon Kawai factory visit and reception
May 25	Hamamatsu , Yamaha factory, spend night at hotel of Yamaha music camp.
May 26	Morning visit facilities of music camp at leisure afternoon leave for Tokyo airport and Journey home.

Piano Technicians Guild Orient Study Tour



Dan Evans
**Western
Regional
Vice
President**

Registrations for the Orient Tour are filling rapidly, and much enthusiasm is being shown for the tour, headlining the I.A.P.B.T. Convention in Tokyo, Japan, with visits to technicians and factories in Korea, Japan and China. In addition to the Convention, we have been invited to visit the Young Chang and Samick piano factories in Korea, Yamaha and Kawai in Hamamatsu, Japan, and two or three in China. All of this, together with sightseeing from Seoul, Korea, throughout Japan and China, ending in Hong Kong for the return to Los Angeles flight. Shopping will be available in all cities to be visited, and duty free items are available in some areas.

This promises to be the chance of a lifetime for travelers, and an opportunity for a personally guided tour by Mr. Halstad McCormac, whom many of you have already known as a tour guide par excellence on the Piano Technicians Guild European tour.

There is no limit to the number of travelers we may accommodate in Korea and Japan, but the Chinese have invited a limited number of tourists. Therefore it is essential that you send your registration in at once. The form may be found in the centerfold of the October *Journal*, or from WRVP Dan Evans.

Please note there are four tour possibilities included, for the benefit of those who cannot spend an entire month on tour. Tour I includes Korea and Japan; Tour II, Korea, Japan and China; Tour III, Japan and China; and Tour IV, Japan only. Ask Mr. Foster Travel Forest Service has been retained to handle tour arrangements, and your registrations should be sent to them. For other questions, feel free to write Dan Evans, 4100 Beck Ave., Studio City, CA 91604.

SOUND BACKGROUND

Jack Greenfield, RTT
Chicago Chapter

JUST KEYBOARD TUNING

Early Interest In Just Intonation

Advances in harmonic structure gave impetus to several new trends in tuning systems to replace Pythagorean tuning which began to decline rapidly early in the sixteenth century. One of the more conservative directions was the development of *just* tuning, the formation of scales with pure intervals. It was believed that this did not violate the traditional principles observed for centuries.

The first person to grasp the full implications of just intonation and offer classical authority for it was Gioseffo Zarlino, considered by music historians "the most influential personality in the history of music theory from Aristoxenus to Rameau." Zarlino was born in Venice in 1517. From 1565 on until his death in 1590, he held the most prestigious post in Italy, the position of *maestro di cappella* of St. Marks in Venice. Here he was head of a musical organization that included two organists, an accomplished band of string and wind players, and a large double choir.

In addition to his work as a composer and other forms of practical music, he contributed much to the progress of music theory. In his work on scales and consonance ratios, he reached some conclusions concerning the relationship between Ptolemy's superparticular ratios and pure or just intervals that coincide with principles of the modern understanding of the harmonic series of

musical tones. Other accomplishments include organization of the concepts of triad formation and of major and minor as opposites. He initiated the printing of the first Latin translation of the *Harmonics* of Aristoxenus.

Problems Bar Spread Of Keyboard Just Tuning

The widest general interest in just intonation occurred during the sixteenth century when theorists tried to develop acceptable just tuning systems. There were also efforts with keyboard instruments built with more notes per octave to provide extra notes at alternate

"a system based on the octave (2:1) the pure fifth (3:2) and the pure major third (5:4)" Pure Pythagorean intonation falls within this classifications as a tuning cycle based entirely on pure fifths. Also included are the late fifteenth century Ramis de Pareja and Erlangen Monochord patterns which can be considered as tuning chains in which, after an initial sequence of pure fifths, one of the tones is obtained by tuning as a major third, the cycle is then completed with pure fifths.

Another well-known tuning system of this type was the pattern published by Agricola in 1539:

AGRICOLA'S MONOCHORD (cents from low C)

C ^o	C# ⁻¹	D ^o	D# ⁻¹	E ^o	F ^o	F# ⁻¹	G ^o	G# ⁻¹	A ^o	B# ^{bo}	B ^o	C ^o
0	92	204	296	408	498	590	702	794	906	996	1110	1200

itches, increasing the number of usable just intervals. None of the just scales were free of the problems of many harsh unusable intervals. If anything, with some changes the number of disadvantages was increased. As for the special keyboard instruments that were built for just tuning, they could be used for demonstration but were too complicated for performance.

By the early seventeenth century, just tuning had lost most of its devotees. Interest on a much smaller scale revived during the nineteenth century when a few theorists, musicians, and other individuals continued the quest for a practical method for use of just intonation on keyboard instruments. Such efforts are continuing.

Typical Just Scales

Although just intonation has no place in practical keyboard tuning it is of interest for theoretical and historical reasons. At the time the early just scales were published, it was customary to present them as monochord patterns. For present day analysis, their structure is simpler to perceive on the basis of the modern interval size and tuning cycles shown by Barbour (*Tuning and Temperament*) and Jorgensen (*Tuning The Historical Temperaments by Ear*). Barbour defines just intonation as

The exponents indicate that B^b F C G D A E B, all with 0 exponents are tuned as pure fifths or fourths. F# with a -1 exponent is tuned a pure major third (386¢) to D^o. The chain is completed by the remaining notes with -1 exponents tuned as pure fifths or fourths thus placing them as the top notes of three additional pure major thirds.

In 1615, mathematician Salomon de Caus published a pattern which included two major thirds in the tuning cycle.

The exponents indicate the tuning sequence is made up of the following clusters of pure fifths or fourths: B^{bo} F^o C^o G^o D⁻¹ A⁻¹ E⁻¹ B⁻¹, F#⁻² C#⁻² G#⁻² D#⁻². The notes D⁻¹ and F#⁻² are tuned as pure major thirds above B^{bo} and D⁻¹. While the substitution of a second major third in the tuning cycle doubled the total number of pure major thirds, new serious disadvantages were introduced and this tuning was no more acceptable for practical music than earlier patterns.



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DE CAUS'S MONOCHORD (cents from low C)

C ^o	C ^{#2}	D ⁻¹	D ^{#2}	E ⁻¹	F ^o	F ^{#2}	G ^o	G ^{#2}	A ⁻¹	B ^{bo}	B ⁻¹	C ^o
0	70	182	274	386	498	568	702	772	884	996	1088	1200

In 1776, although interest in just intonation had dwindled, Friedrich Wilhelm Marpurgh published a just tuning based on Ptolemy's Diatonic Syntanon scale. The following table shows interval ratios also (bottom line).

limited revival of interest in just intonation, the number of special instruments built increased. Included were at least three pipe organs in United States and England with forty to fifty-three pitches per octave. These instruments con-

MARPURGH'S MONOCHORD, NO 1 (cents from low C)

C ^o	C ^{#2}	D ^o	E ^{b+1}	E ⁻¹	F ^o	F ^{#1}	G ^o	G ^{#2}	A ⁻¹	B ^{b+1}	B ⁻¹	C ^o
0	70	204	316	386	498	590	702	772	884	1018	1088	1200
	25	9	6	5	4	45	3	25	5	9	15	
1	24	8	5	4	3	32	2	16	3	5	8	2

There are four clusters of pure fifths or fourths:

E^{b+1} B^{b+1}, F^o C^o G^o, A⁻¹ E⁻¹ B⁻¹ F^{#1} and C^{#2} G^{#2}.

The first tone of the second, third and fourth clusters are tuned as pure major thirds above C^{#2}, F^o, and A⁻¹. Even though Marpurgh's Monochord No. 1 is musically inferior to some of the other just tunings, it has become known as the common model of just intonation.

Keyboard Instruments Designed For Just Tuning

As it became evident that no rearrangement of the tuning cycle would give an acceptable twelve-tone just keyboard tuning, another scheme investigated was the addition of extra tones to increase the number of pure intervals which could be formed. As early as 1529, Lodovico Fogliano discussed a keyboard design with two D's a syntonic comma apart. One D was to be pure with F and A, the other D was to be pure with G and B. Other schemes using extra notes also were proposed by such eminent theorists as Zarlino, Salinas, and Mersenne.

One of the earliest known designs of an instrument with a keyboard for just intonation was the three manual pipe organ of Giovanni Battista Doni of Rome around 1635. There were sixty keys in the octave but only thirty-nine distinct pitches, some keys were duplicates. Not all of the pipes were tuned in just intonation, a few were tuned in quarter-tones for the purpose of demonstrating ancient Greek quarter-tone scales. In 1639, a harpsichord was built in Haarlem with two D's and ten chromatic notes including two F#'s, C#, G#, D#, and two B^b's, E^b, A^b, and D^b to the octave.

One hundred years later, in 1739 Quirinus von Blankenburg of Holland built an enharmonic harpsichord with eighteen notes to the octave.

During the nineteenth century, with a

tained extra manuals or special pedal systems to play the additional notes. While pipe organs were beyond the financial reach of most investigators, the introduction of the harmonium made an instrument suitable for experimentation available at much lower cost. R.H.M. Bosanquet of London in 1875 published a treatise on his research using a harmonium with octaves divided into fifty-three equal intervals which could give approximately just scales. One of the most ambitious instruments among the others was Shohe Tanaka's harmonium with 312 notes to the octave. These were produced by an elaborate keyboard system which incorporated mechanical transpositions, but there were actually only seventy separate pitches to the octave.

Herman Helmholtz, an ardent proponent of just intonation, used a more modest instrument in his research in the 1870's. He owned a large harmonium with two manuals. The reeds were tuned as two just scales a comma apart giving 24 pitches per octave. There was so much interest around 1885 that a London firm offered standard twelve note octave harmoniums with the reeds tuned in just intonation for student use. The only pieces which could be played were those with simple chord structure such as *God Save the Queen*, *Adeste Fideles*, and *Auld Lang Syne*, in C major.

The keyboard design of the special instruments presented major problems when there were dozens of notes to the octave. Besides the necessity of grouping many notes in a limited space, it was necessary to arrange the keys so that the desired combinations to form intervals and chords could be reached by the fingers. These keyboards were found entirely impractical for the performance of musical compositions.

There has been modern development to solve the keyboard problem. In 1939 Eivind Groven, a Norwegian composer

and musicologist with an interest in just intonation, built a harmonium with thirty-six pitches per octave. The choice of pitch inflections was made automatically by electric circuits that functioned as a computer. Later instruments operating on the same principles include a single stop pipe organ (1954), an electronic organ with 43 pitches per octave (1965) and a complete pipe organ (1970).

Just Intonation Today

Even though just intonation has no place in normal keyboard tuning, it appears elsewhere in music. It is believed that vocalists and many instrumentalists have a tendency to adhere to just intonation. The study of just intonation in relation to the harmonic series is usually included in modern acoustics theory. Unfortunately history is ignored in some acoustics references which imply that there is only one just scale. As presently defined, a scale of just intonation can be composed of other just intervals -with other relatively simple interval ratios as well as pure fifths and fourths. The *Piano Technicians Journal*, July 1978 pgs 10-11 contains Owen Jorgensen's unusually interesting example, a just intonation tuning composed of the twelfth through twenty-fourth degrees of the harmonic series.

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50 Point Guide To Grand Regulation Part XXVI

Step #39 Adjust key stop rail

This step is certainly one of lesser importance, although it can not be overlooked. The key stop rail has, in my opinion, two functions. The primary function, though rarely needed, is to keep the keys from falling off the key pins when the piano is put on its side to be moved. Therefore, the key stop rail should be so adjusted that it is close enough to the keys to keep them from coming off the key pins when moved, with perhaps a little bit of play (maybe 1/16" or so) between the tops of the keys and the bottom of the key stop rail. This amount of play should be checked on the black keys, as they will be a little higher than the white keys. If the piano is never going to be moved, it is certainly acceptable, possibly even smart with foresight, to remove the key stop rail altogether. This will eliminate problems associated with function number two.

Opposed to function number one, which is rarely used during the life of a normal home piano, function number two seems to crop it's ugly head all too often. That is, to cause grief to piano technicians! The key stop rail is forever causing wasted time in removing it and reinstalling it. It often interferes with the other action parts. The screws which hold the rail in place come loose and rattle on the keys below, sometimes even causing the keys to stick. This rail must always be removed to retrieve foreign objects which have gotten caught between the keys, or when making adjustments in the key height or key dip.

The regulating technician must be very careful when installing this rail. Putting the rail too low causes it to bind on the keys, making the hammer line rise while throwing off the key level. On some pianos, notably Mason & Hamblins, the rail can not be too high or the keys in the middle of the keyboard under the locking mechanism will bounce up and cause a noise when they hit the bottom of the lock! I have also seen cases where the key stop rail was too high, letting the sharps come up too high on the rebound. The back of the sharp hits the front of the fallboard and creates a knocking sound that is a hard

one to track down.

The list of griefs that this rail can cause seems to get longer every year. Pencils, pens, pins, toothpicks, hairpins, etc. all too often get lodged between the key stop rail and the keys. I particularly dislike having to buy a special tool and to carry it with me just to unscrew the rails with the little brass nuts. And once the slotted brass nuts have been removed and the rail taken off, invariable one of the unslotted brass nuts which holds the rail in place from the bottom is so frozen that I can not get it off the threaded rod! Everyone seems to have their little pet peeves about something. Surely one of mine is the key stop rail.

Section V The Dampers and Pedals

Whenever I have attended or given a class on grand regulation, the dampers, sostenuto, trapwork and pedals are always last on the presentation. There never seems to be enough time devoted to these items, sometimes having to be

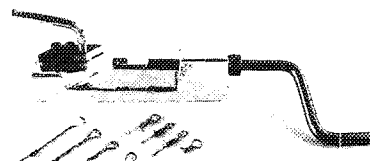
eliminated altogether because of the lack of time. Since time and space is not a factor here, we will be discussing these last eleven steps in great detail. The order in which these last steps is taken is not nearly as important in section V as it was in earlier sections. However, I have tried to establish a sequence that is easy for me to follow. This sequence will be:

- 40) Adjust sustain pedal rod length and stop
- 41) Rebrush/lube pedals and trapwork
- 42) Check damper guide rail, ease or rebush
- 43) Check damper lift from key (1/2 dip)
- 44) Check damper lift from lifter rail
- 45) Adjust damper stop rail
- 46) Check string level/damper seating
- 47) Check sostenuto tabs for evenness, adjust knife angle
- 48) Adjust sostenuto knife in/out and up/down
- 49) Adjust shift pedal rod length and stop screw
- 50) Adjust strike point, tune, voice

Continued on page 31

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“Form Follows Function”

*A look at how
Frank Lloyd Wright
accommodates a
6 foot Grand.*

Allan Day, Apprentice Chicago Chapter

Frank Lloyd Wright, the internationally known architect, built about 24 homes here in Oak Park IL, including his own.

His 88 year old home still exists today as the focal point and headquarters of the Frank Lloyd Wright Foundation. Craftsmen representing many trades have been working under the direction of the Frank Lloyd Wright historians to restore and recreate the home in its original detail.

Although Mr. Wright's plans for this house didn't include accommodating a piano, his surviving children remember a grand piano stuck in the wall of the children's play room.

In my scarce knowledge of Frank Lloyd Wright's work, I do remember the Wright axiom... "Form follows function". He wasn't about to violate it in the case of a grand piano. Instead (in true genius form) he was able to have a 6' grand piano in the room without it taking up any space!

None of the historical photos revealed this special piano. However acting on the testimony of the children the restorers probed and discovered a hook suspended on the wall of the staircase leading to the children's room. The stair landing above this hook was fashioned like a trap door (on hinges); but why?

The answer was ingenious. The 6' grand was suspended over the stairway with only the front legs resting on the floor of the room. The back leg was removed and in its place a metal plate was attached which received the hook on the wall of the stairway. From the room all that is seen is the keyboard, music rack, lyre and front legs. Imagine the piano technician on his first visit walking up the stairs encountering the underside of a grand piano.

The stairs above the piano soundboard fold on hinges and emit the sound upward into the loft of the room above the player's head. Now that a vintage

Everett grand has been donated and installed in the original unique way we can experience the acoustics of this arrangement.

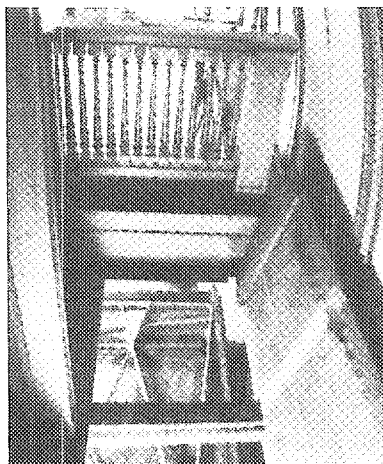
The player loses the intimacy of sound with the soundboard being concealed like this and is struck by the same sensation that an organist hears listening to the response of a remote set of pipes. Because of the arched ceiling, the sound is carried along the ceiling as in a tone chute. Unlike the cheated player, the listeners standing 14 ft. in back of the player hear the sound with clarity and no loss of volume.

A Cicilian player unit mounted on the piano's keyboard was part of this family entertainment center. Even though Mr. Wright was a capable pianist, I can understand the reason why he might have preferred to listen rather than play this instrument.

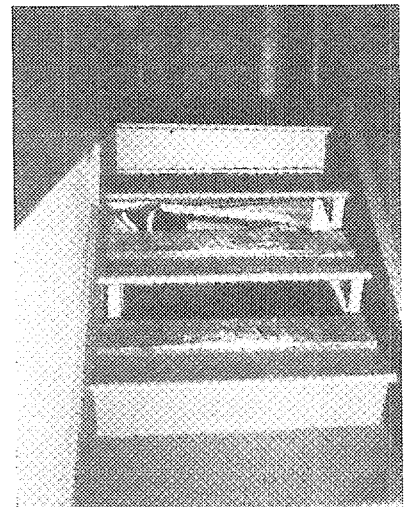
The player unit is currently being rebuilt by a technician in Massachusetts. Our shop has restored the piano and now the center will be using it often to highlight the regularly scheduled tours that are conducted through the house.



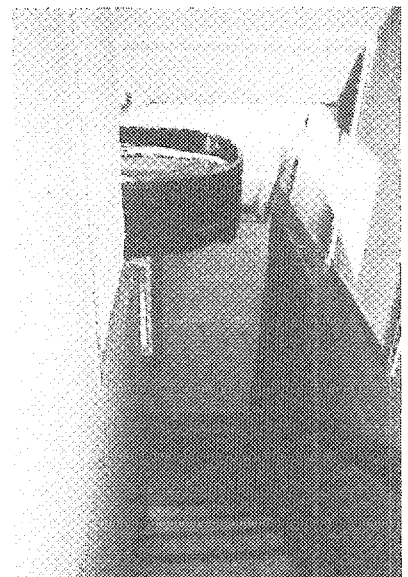
**A view of the underside of the case
seen while climbing the stairs.**



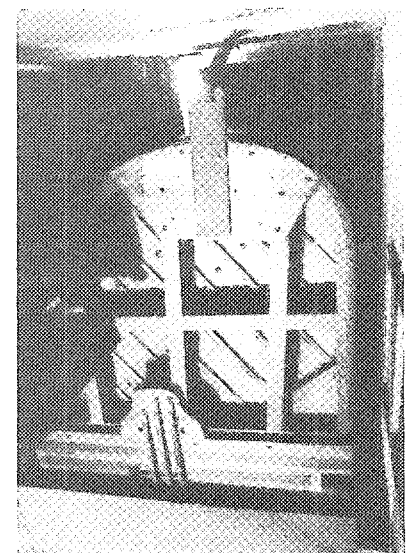
**A view of the trap door in the stairs
allowing the sound to go in the loft
above the piano.**



**Vertical risers of the stairs are on
hinges and fold down during
performance.**



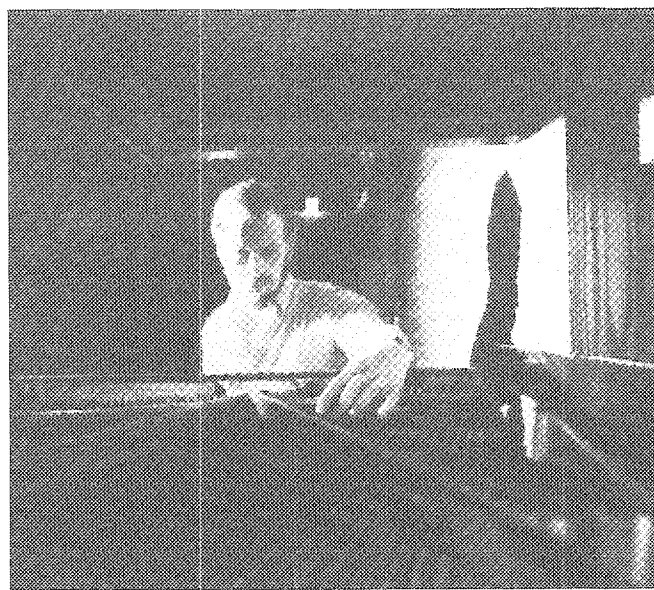
**Tail end suspended over stairs by
hook.**



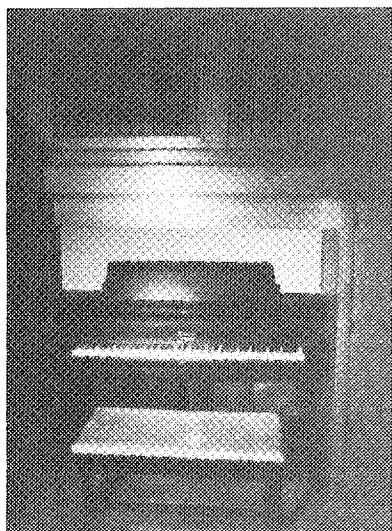
**Underside showing hook receptable
anchored into piano.**



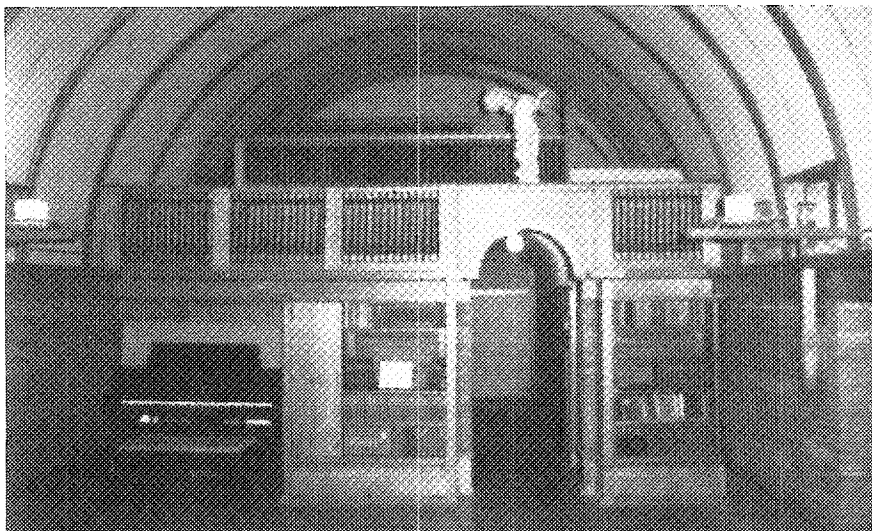
Front view with cloth screen removed for accessibility.



Shot from rear showing clearance for working.



Front views showing lower panel behind lyre, legs and screen behind music rack.



This article is directed toward the beginning tuner and for the craftsman to review. The subject of this article is about tuning stability and some of the items other than hammer technique that contribute to instability.

First of all, if you have read previous articles of THE TUNER, you have read that a piano will not stay in tune when any of the plate screws are not tight. Be sure to check all plate screws prior to setting up for tuning.

Most plate screws on vertical pianos are readily accessible on the top of the plate. Use the screw driver bit especially adapted for use with your tuning lever. For those screws on the bottom of the plate that prevent use of the tuning lever, use a crescent wrench, vise grips or closed end wrench in place of the lever. The only exception may be player pianos where the bottom plate screws are not accessible without removing some of the player mechanism.

On grands you will note that some plate screws are slotted and some have hex head screws. Others have acorn nuts. For the latter of these three, be aware that if the threaded stud that projects through the plate into the nut is snug in the inside portion of the acorn nut, you can not tighten anymore without stripping the threads. See **Figure 1**.

The hex head bolts or screws vary in size and I suggest you carry a few sockets and a ratchet wrench with an extension to tighten these screws. You will find some grands will have two different size hex head screws.

To help you keep your sockets contained in one convenient place use a bolt

with a washer under the head, place the sockets over the bolt and secure the other end with a washer and nut.

There are a few grands that have the end plate screws next to the spreader bar located under the music desk slides. Remove the desk slides to get to the screws. Your socket or screw driver blade will not do the job until you remove the slides.

Occasionally on grands the lid is in the way when you try to tighten the plate

screws near the bass strings. In these instances replace your tuning lever with a crescent or the same tool you used to tighten the bottom screws on the vertical plate.

Should you find a plate screw that will not tighten, remove it and repair the hole. For the beginner, I suggest you use an ice cream stick, split down the middle and cut to the same length as the threads on the plate screw. Drop the small tapered end into the hole and push it to the bottom of the hole. DO NOT remove more than one plate screw at a time.

Loose pressure bar screws will contribute to instability. Be cautious however if you find a loose pressure bar screw. The angle of the wire passing from the pressure bar over the "V" bar is critical and predetermined in the piano design and should not be changed, at least not by an apprentice or beginner. Excessive angle increases tuning difficulty. See **figure 2**. If you find a screw that won't tighten use the same repair procedure as noted above for plate screw.

Twist in a tuning pin will cause instability. How do you twist a tuning pin?

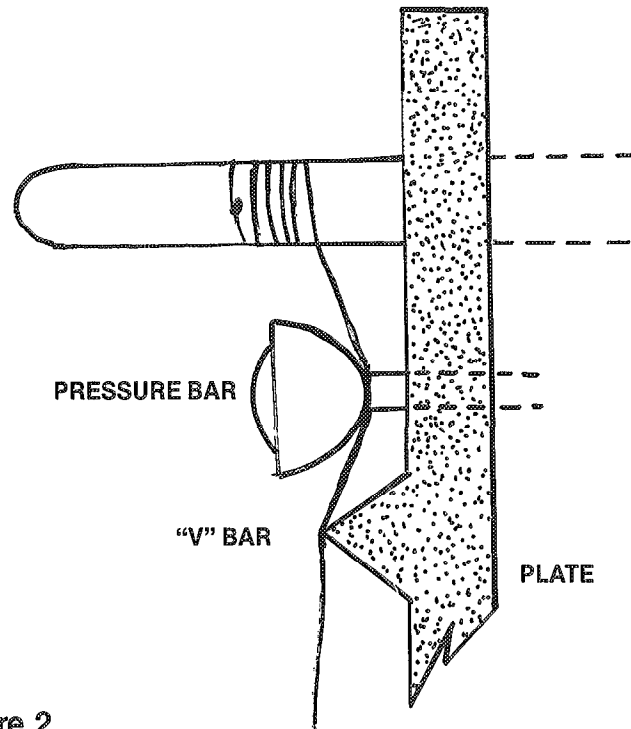


Figure 2

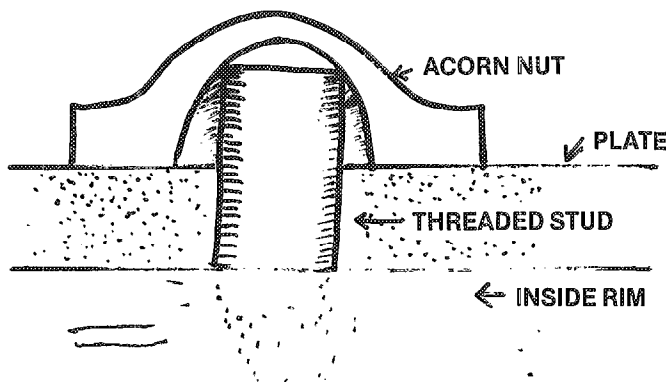


Figure 1

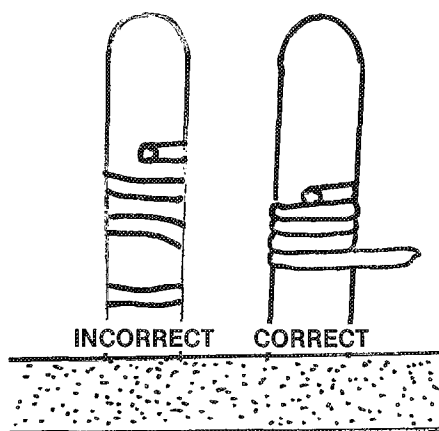


Figure 3

Simply, by rotating the tuning pin with your tuning lever. The top of the pin turns and the body of the pin in the pin block holds firm. Due to the good memory in the material of the pin, it will always return to it's original position. To preclude leaving a tuning pin with a twist, develop a hammer technique that will tell you if the pin is turned or twisted. Also, develop a technique to remove the twist. A good beginning to develop this technique is to have a good sensitivity in your finger tips on the tuning lever. You can eventually develop a sensitivity to know exactly how much twist you have put in to the pin and exactly how much a compensation is needed to remove it.

Tuning pin coils if not properly set will cause tuning instability. The coils must be tight against each other, not just because it looks good, but because they need to be tight against each other to hold. See **figure 3**.

If you find the coils are not tight, place a coil tightener under the coil, loosen the tension on the string, usually about a

quarter will do, pull up on the coil tightener, hold it and tighten the tension on the string. Next, use a flat bladed tool that will not mark the coil and tamp down the coil to make it tight. This last step is as important as the first.

Tuning pin brackets not set properly can cause tuning instability. What is a becket? Refer to the illustrated book on "PIANO PARTS AND THEIR FUNCTIONS" compiled by Mr. Merle Mason, page 68. It reads as follows: "BECKET: A short, bent over wire in the tuning pin coil of a piano string, designed to reach through the hole in the tuning pin and to serve as an anchor for the coil and that end of the string." Refer to **figure 4**.

The becket must be tight in the becket hole as you see in the illustration. The portion of the wire that comes out of the hole and proceeds around the pin must be tight against the wall of the pin. To make it tight use a tuning coil tightener or for lack of a better tool use long needle nose pliers. Tighten the becket when the string is up to pitch and notice the drop in pitch after you have tightened it snugly around the wall of the tuning pin.

Tuning pin bushings. As you know, there are pianos manufactured with and without tuning pin bushings. If you break one during replacement of a tuning pin, remove the broken bushing, clean the tuning pin hole and replace it with a new one of the same size. Check your

on a vertical piano. My word of caution to the beginner at this point is to say that until you have developed a technique to turn the pin on its axis you will not have sufficient experience to "bend" the pin the same as the experienced tuner.

The hitch pin. When you have replaced a string, be it plain wire or a wound string, you should have a procedure that covers all the necessary technical work. Include the tuning pin discussed above, spacing, setting the wire firmly on top of the bridge, and setting the string firmly around the hitch pin. See **Figure 5**. Use a wood dowel, a hammer shank or a piece of soft brass. Place it on the string around the hitch pin and tap with a small ball pein hammer. If the string or loop in the case of wound strings or individually tied strings, is not firmly fixed into place your tuning will be unstable.

Another factor that can contribute to tuning instability is the the height of the tuning pin. This can occur when you or another technician replaced a string and didn't drive in the tuning pin to match the original height established at the factory. If the tuning pin is too high, the bottom of the coil will separate. This condition does not provide the proper angle from the tuning pin to the next contact point such as the pressure bar.

There are many other factors that contribute to an unstable tuning for the beginner such as a rolling bridge, excessive cant in the bridge, grooves in the

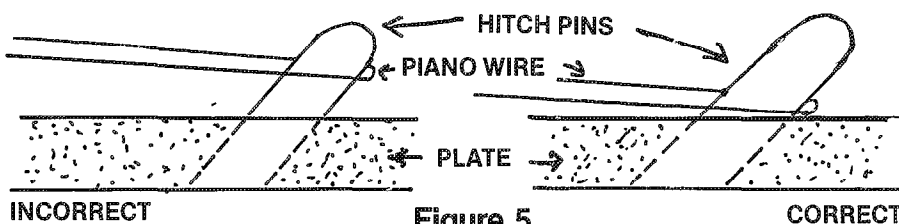


Figure 5

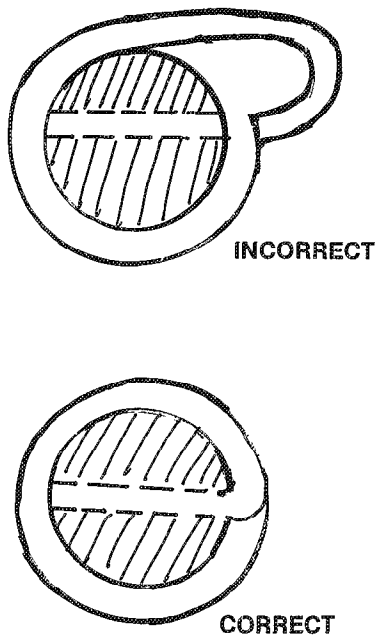


Figure 4

catalogs for the sizes available. Place the new bushing in the hole and gently tap in with a ball pin hammer. Make sure it goes in straight and even. If the piano was designed to use tuning pin bushings then it is necessary to have them all in place in order to have a stable tuning.

Bent tuning pins. The experienced tuner knows this creates all kinds of problems and instability. When I see beginning tuners pull or push a tuning lever from or toward the soundboard, I wonder if they really know what they are doing, not only to the tuning pin hole but the tuning pin as well. The word for the beginner is, turn the tuning pin so the movement is around the center axis of the pin. This will help you prevent bending the pins.

The term "bending the pin" means something entirely different to the experienced tuner. To him, it means placing a little tension on the pin either in an upward direction or downward direction

capo bar or "v" bar, worn agraffes poor pin block, cracked soundboard that is separating from the ribs and the list goes on and on. We will continue to learn more and more as we continue in our profession and that leads to the following:

The information you have just been reading was obtained by attending chapter meetings, local seminars, State and National Conventions. This isn't merely a relay of information. It is information learned, tried and proven. Your most valuable asset as a member of the PIANO TECHNICIANS GUILD is the free flow and exchange of information that will allow your to improve and become good in your profession. Don't let the opportunities pass you by. Only you can be the loser. PARTICIPATE. Sharing is one of the greatest gifts. It also is one of the best means to be happy in what you do. *Happy Tuning.*



PUTTING A DAMPER ON IT

A corollary to the "jar of lube" solution to trapwork problems is the "works close enough, don't mess with it" attitude toward dampers. It may be just inaccessibility which creates this, for the system is fairly simple and not difficult to work on when understood. Ideally, dampers work in straight lines: the wires go straight into the top flanges and straight through the guide-rail. The heads sit squarely and travel straight, so the felt contact with the string is uniform. Granted, there is little tolerance for deviation from this straight-line norm; the parts are closely interdependent so one can throw all the others off. However, this means that instead of minimizing attempts at damper work, technicians must become familiar with the entire system. As Cliff Geers says in his damper classes, understand it and don't be afraid of it: that's the most helpful advice I can repeat. This two-part article deals with the complete rebuilding of a grand damper system; some of the detail may seem unnecessary for those who mainly want to stop a "zing" but to cure the symptom one has to isolate the cause, and that takes an understanding of the whole system.

Dampers are brakes; they stop sound. Like brakes, they should offer a range of response, from gradual slowing to full stop. The response must be uniform and predictable. Unlike brakes, dampers must work individually and as a unit; each mode is important. Those who aren't skilled pianists can forget that precise damping control is critical for the artist. It is; for instance, at a chapter meeting in southern California, 16 different tonal effects were demonstrated, all achieved by refined pedal use. Fortunately, one doesn't need the skill to achieve these effects to regulate the system so others can achieve them. If the system is working correctly, all the subtle variations will be available.

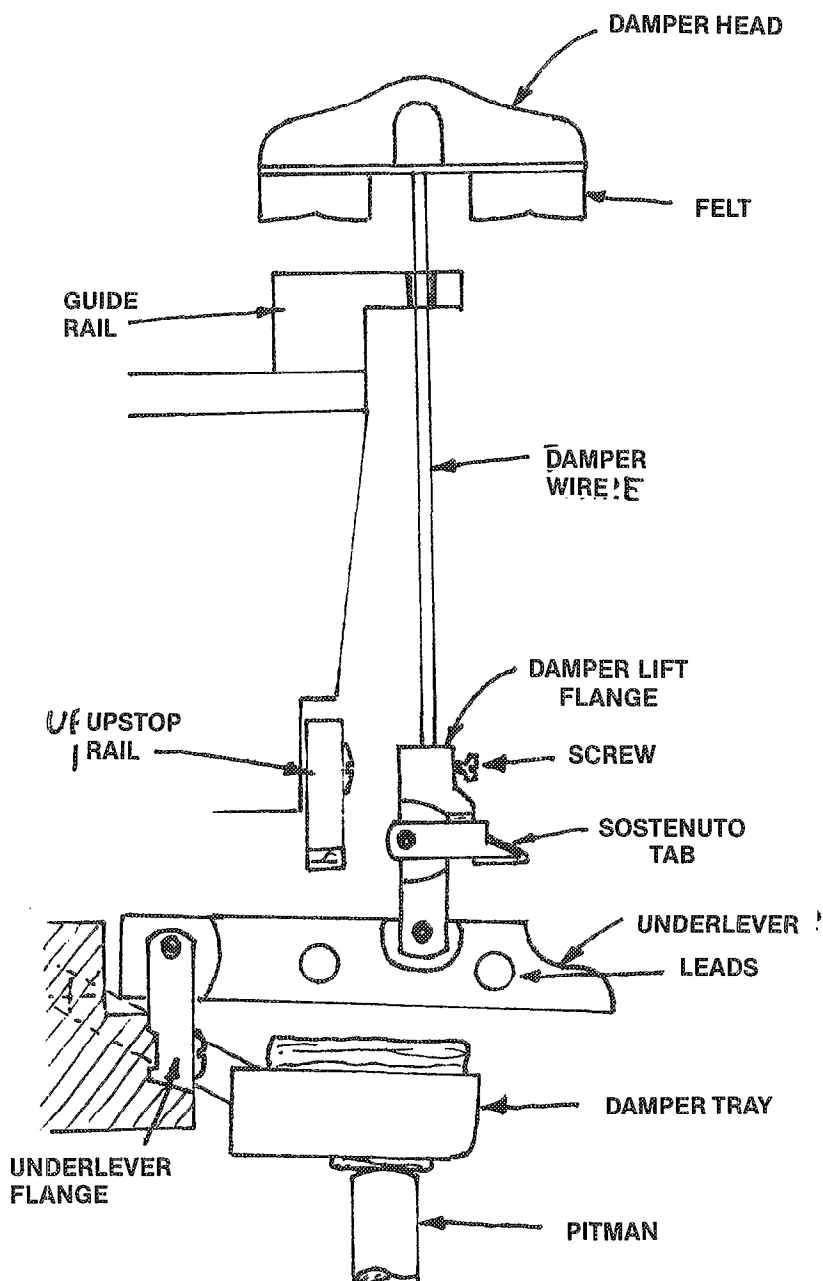
Having made a pitch for viewing the system as a whole, I'll now break it into its components parts. For a brief nomenclature review, see **figure 1**.

Felt is the primary damper part. Good damper felt, like good hammers, makes

a good job easier: I use Laoureux felt. When possible, I buy felt at conventions where I can see it to judge uniformity of cut and grain direction. My policy is to keep as wide a variety on hand as I can store; it can be difficult to judge from a picture what size will match the original felt, and which sizes of the various types will work together best. With a choice on hand, I can experiment.

Location of damper felt is critical. The string oscillates in a complex motion,

dividing at nodes which create increasingly smaller segments of string beating at increasingly higher frequencies. Activating an open string and touching it lightly at various points will find nodes and produce overtones. The point of this in regard to dampers is that the felt must contact the string where it will not create pronounced or discordant overtones. Different makers place their dampers to minimize certain overtones, and to damp others most effectively. To



maintain good damping and the characteristic sound of a piano, felt placement and size must be exactly duplicated. In other words, if a damper head has two 1/2" gap between them, don't replace them with a 1 1/4" piece of felt.

Damping effectiveness is also influenced by whether the felt has horizontal or vertical grain. Think of the fibers in damper felt as a bundle of pipe cleaners. The sides of the fibers are softer than the ends; side grain felt dampers are therefore quieter and more effective than those with end grain contacting the string. Flat dampers are always horizontal grain felt and are very effective on short strings. However, horizontal grain felt packs more with use, making the regulation less stable. There are stitched and unstitched flats. Although it is common to see unstitched flats in grands, the stitching (or glue-crease) does have an advantage. The points of a stitched flat contact the string first and this smaller area puts more damping pressure on the string than would a large solid surface. Stitched flats also "thump" less when released by the pedal: the "points-first" landing offers a little cushioning. The stitching in the middle also helps keep the flat from contacting nodes. This same effect is sometimes achieved by using four very small felts instead of two larger ones.

Longer strings have a greater excursion as they vibrate and wedge felt is necessary as it settles between the strings. Usually there is a section of trichord felt in the lower tenor section; sometimes there are half and half trichord and flats to ease the transition or because the maker finds it the most effective. Trichord felt comes in both grain orientations. Vertical grain is preferable because as the felt settles between the strings the fiber sides contact them. However, it is possible to cut a finer point in horizontally grained felt so it is often found where strings are very close. Vertical grain wedge felt also holds together better: trichords sometimes separate or curl. Part of this is due to careless temperament strip insertion (always lift the dampers with the pedal so the felts aren't pinched as you insert the strip) but it can also be due to horizontal grain felt.

Bass damper felts, bichord and monochord, are similar to trichord in grain orientation and reasoning. One possible problem with vertical grain monochords is that they spread with use and may eventually need trimming.

As for backed and unbacked felt, I've never noticed a difference. It's as well to duplicate what was originally in the piano. If you prefer, stock all unbacked felt and use bushing cloth (the cheap kind) or felt to back the heads before the

felt is applied. This offers a chance to even up the level of the heads even if the felts fall to different levels. It also saves a little storage space since a variety of sizes and types can be stored without worrying about backing.

Try to duplicate the thickness of the original felt. You can adjust for some difference, but it saves time all along the regulation process if all felt has been replaced to duplicate the original: damper felt, tray felt, pedal rest felt, etc. If there are tri-and-flat combos, the flats must be thinner than the trichords so the trichords will seat on the strings. Maintain the number of each kind of damper the maker designer; the one exception might be to add a small section of combination dampers in the low tenor if the damping is improved by doing so. The trichord is usually on the back (toward the bridge) where the strings are further apart but there are quality pianos with the trichord in front and this should be maintained.

Before a damper system is removed for rebuilding, it should be inspected for problems. If it is a modern system not too much examination is required unless someone has really messed it up; then you may want to rough it back even before rebuilding. Problems such as loose flanges and leads can be found and fixed later, but at least be sure that it is a modern system. If not, warn the customer that it may never function as well as a modern system, and decide if there are modifications which would improve its function or your ease of regulation. For instance, where there are screw-in damper wires, sockets and screws can be added to the top flanges and the threads ground off the wires (or the wires replaced). If there are screws without sockets the top flanges can be easily split, so it may be desirable to change to the socket system. This must

be done on a drill press to keep everything straight. If the plating is worn through on the wires where they pass through the guide rail they would be replaced. This is a major job (and won't be covered here) so allow extra time and charge accordingly. Beyond that, I make it a policy to rebuild every part of the system, so I don't waste time studying worn parts wondering if they'll "do".

If the trapwork is being rebuilt, remove it first. If not, remove the pitmans; the pinned type may have cotter pins so watch for them. Remove the sostenuto rod, saving any bushing felts for samples. Mark the location of the hangers and remove them if they need cleaning or other attention; keep them in order and don't mix up parts.

Remove the dampers and place them in order in a rack. A cardboard box with rows of holes punched is adequate; a simple wooden rack is sturdier. A rack with one long slot instead of individual holes makes for quicker handling of the heads. Number the heads: racks tip over. After the dampers are out, remove the upstop rail (there may be brads to remove as well as screws). Then remove the entire underlever system. This is a must; even if there are no apparent problems, this is the only time it can be inspected easily and it is foolishness not to do so. It is usually held by blocks at both ends which are screwed into the belly rail. Use tape to hold the screws in the blocks, and label them bass and treble and indicate which way is up. If there are shims under or behind the blocks, save and label them. Check for stray parts hiding in the dark recesses of the keybed (broken springs, etc.). Remove the damper guide rails (if the piano is strung use a wedge to separate the strings so they aren't nicked - the rails can be slid forward and over the edge of the soundboard). Keep

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the screws and any spacing shims in order.

Now you have on the bench a whole bunch of parts. Before removing the old felts, prepare the replacements. Make a quick count and list how many of each kind of damper there are (in case the piano is being unstrung or in a different location this information may not be available should you become confused). Also note whether the felts are flush with the heads or how much they overlap, and observe any other special trimming or alignment.

Felt is tricky stuff to cut, especially thick soft damper felt which distorts as cutting pressure is applied. It requires a good sharp edge. Razor blades are wonderfully sharp, but they bend under pressure, giving uneven cuts. They are also difficult to control because there isn't much to grip: even in a handle they do poorly. The solution is a good knife which must be kept sharp. The long, thin-bladed felt knives are of relatively soft steel, which makes them easy to sharpen (although the edge doesn't last as long). At some point in a craftsman's career he or she must learn to sharpen, and a knife is the easiest place to start. Get someone to teach you, buy the necessary stones, and break the razor blade habit.

The guillotine felt cutters are great if they are sturdy enough to be accurate. Here again, razor blades can be used but the same problems occur. The blades from a Stanley knife (break off the corners) work better. In addition to the guided blade, the guillotine offers guides to support the felt - the more you can control the distortion, the better. In the Yamaha damper class we saw a picture of small wooden blocks routed to the different felt shapes; these maintain control of the felt as it is sliced with a knife. Scissors don't work well; pruning shears can, if they are sharp. Remember that in addition to cutting the felt to an exact dimension, the ends of the dampers are visible and shouldn't be ragged or uneven.

Before cutting trichord felt, draw a line along one side of the back (the side which contacts the head) of the strip. As you glue on the felt later, keep the line on the same side of the head for both front and back felts. This is to allow for slight variance in the two legs of the wedge; having the front and back pieces equal makes adjusting for this easier. Reject any trichord felt which has vastly differing wedges, or any monochord felt which is similarly lopsided.

Check samples throughout a section to be sure of matching felt length. Lay the felts on a tray or in the flat boxes to keep them in matched pairs and in order. Trim the corners of the dampers at the break so they will clear the plate. Some pianos ease the transition between damped and undamped strings by either clipping the edge of the last one or two flats or using trichords with one "leg" removed - duplicate this. Double check to be sure the count is correct and then remove the old felt.

There are several methods to do this. The choice depends on what you have: time, equipment, or muscle. Begin by peeling off as much felt as will come easily with a knife. Loosen the felt at the edge of the head and pull it toward the wire - not the other way or it may chip the head. (Use an old knife as it may nick against the wire). If the whole felt pulls off cleanly, only a light sanding is required, but usually more removal is necessary. You can apply acetic acid, either straight or mixed with alcohol. This is effective but nasty to work with - wear gloves and respirator and goggles. The acetic will soak the felt and glue loose but it takes time, and the heads must dry thoroughly afterwards. Keep the acid off the wire and the finished side of the heads. While the heads are soaking, you can work on the guide rail or the under-level system. Guide rail bushings can be removed the same way - if you start them soaking before you cut felt they will now be ready for removal (try to apply the acid only to the bushing or it may stain the wood). Work back and forth between the two as things dry. A group of damper heads can be placed upside down in a vice and scraped or sanded. These are the muscle methods; care must be exercised not to chip or round the corners of the heads. If you have power sanding equipment and can keep the heads square, that is the fastest-with-least-effort but requires equipment.

Remove all old felt and glue and then clean the wires and clean or refinish the heads. Remember the cosmetic effect of a damper job; either clean the heads with 4/0 steel wool and lemon oil (being careful not to get oil on the gluing surface or the wire) or refinish them. Be

sure the wires are tight in the heads: glue-size if necessary. Spot-replacing a worn or broken wire is not as difficult as replacing the whole set. The wire is supplied with a right-angle bend where it is glued into the head, being tapped with a hammer to be sure it is seated and flush with the side of the head. For now, approximate the bends by comparison with its neighbors. Clean the old wires; I use Brasso and do not apply any lubricant, although some prefer 4/0 steel wool with a trace of vaseline worked into it. Be sure not to remove plating. Check for burrs at the clipped end or where the screw contacts and smooth them.

Some underlevers are screwed to the tray; others are only glued. These glue joints fail and click, so inspect them carefully by prying gently between each one with a screwdriver, and reglue any which are loose. It is also possible to drill into the flange and insert sheet metal screws. If there are screws, tighten them. Check every lead by pushing against it with a screwdriver and feeling the other side for motion. These leads click when loose and are a nuisance to fix in the piano; I "punch" them with a center pin extractor to tighten them. The last bass dampers are usually spring assisted: clean the springs and the felt blocks they ride in. Anything spilled in a piano which misses the pinblock and hammers ends up in the damper system; replace gummy or moth-eaten felt and scrape the tray clean. Replace the tray felt with the same thickness and density of felt, gluing it only at the back edge so shims can be added if necessary.

Check the spacing and travel of the underlevers. Be sure a damper wire slides freely in each top flange. Sometimes the wood swells and must be reamed with a tiny rattail file or drill bit. If the socket is loose it can turn, causing the wire to hang up: realign the holes.

Centers in the underlever system are among the loosest in the piano. Hold the tray so you can tilt it back and forth and watch for sluggish top flanges or underlevers. Be sure these are free before reinstallation.

The tray rotates in the blocks which support it. Clean the pins, rebush the blocks, and replace spacing punchings. Match the size of these punchings carefully to keep side-to-side alignment correct. I lubricate them and the pins with VJ lube. If the pitman contacts leather on the tray, replace it, making sure the new leather is firmly glued or it will groan. If it is a pinned pitman, rebush the hold and clean and lubricate the pin. If there are springs working against the tray, check the felts or leathers they bear against and replace and lubricate them. Occasionally a damper tray will

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warp from working against a spring at one end; if extreme, the tray may need to be replaced. If slight, it may need shims under the support block or under the tray felt to regulate lift.

Since there was an excellent article on damper guide rails recently (Von Der Werstatt, Priscilla & Joel Rappaport, Piano Technicians Journal April 1982) I won't go into it now, except to say that they must be rebushed and it is a false economy not to. The dampers will always be noisy and work poorly if there is excessive looseness around the wire.

Well. All these words and not a single piece of felt glued in, much less wires bent or troubles "shot". However, preparation and attention to details are an important part of a damper job; thus, many problems are cured before they occur. The system is now ready for re-installation, gluing and regulation, and I'll continue with that next month.

After Touch Continued from page 23

Step #40 Adjust sustain pedal rod length and stop

Because the leather and felt involved in lifting the dampers compacts and wears with use, the sustain pedal rod gets too much play in it. Therefore, on adjustable rods, the rod length must be increased to compensate for this wear. This is fairly straightforward in that the adjustable cap is usually hld in place with a lock nut. Simply loosen the lock nut, adjust the rod length to the proper amount, and retighten the lock nut. The correct amount of play in the sustain pedal should be about 1/8 inch. This will allow the dampers to have a small amount of slack in their downward movement as they seat onto a moving string. Less than 1/8 inch can cause the dampers not to function as fast as is possible, while more than 1/8 inch will cause the sustain pedal to have too much play, being an irritant to the pianist.

When making this adjustment, I like to remove the action so that I can see that there is a slight amount of space left between the damper lift rail and the bottom of the damper levers. Without taking this precaution to look to make sure that there is space on every damper lever, it is possible to *feel* that there is 1/8" lost motion, by feeling the pedal as it goes

down, but to have one or two dampers which are lifting too early, causing them to "leak".

Since the damper levers should all lift uniformly from the damper rail, if the sustain pedal rod length is adjusted without checking how the dampers lift from the rail, it may be necessary to readjust the sustain pedal rod length after adjusting the damper lift from the lifter rail. By visually confirming that the damper lift from the rail is correct while adjusting the sustain pedal rod length, you can kill two birds with one stone. If the damper lift from the rail is correct, you can skip over step #44 when you get to that point in the checklist. You can also adjust it again. If the damper lift from the rail is not even, it would be wise to skip step #40 until the damper levers have been regulated.

One note that I would like to add concerning adjusting the rod length on Yamaha grands. The factory inserts a leather washer between the lock nut and the adjustable portion of the rod. Why they do this I don't know. The best lock is to tighten two metal pieces together, so I always remove this leather washer.

If the piano is of the type where the sustain pedal rod is not adjustable, a piece of leather of the correct thickness has to be glued onto the sustaining pedal lever. For this reason I always carry an assorted supply of scrap pieces of leather of different thicknesses. Before gluing a piece of leather onto the pedal lever, make sure that some other means of adjustment is not available. For instance, on Mason & Hamlin's, the damper lift pitman which connects the pedal lever to the damper lifter rail is adjustable.

Once the rod length is adjusted, check to make sure that the stop mechanism for the downward movement of the sustain pedal is correct. On most pianos, this stop is on the bottom of the keybed. It can be a piece of felt, or even a capstan. Some manufacturers have put

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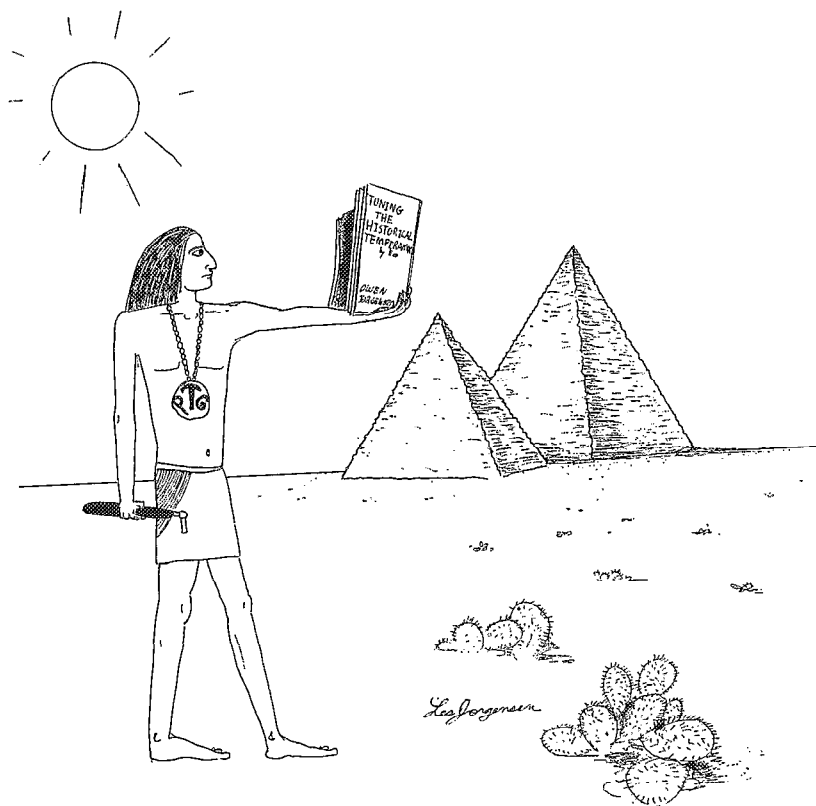
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this stop in the pedal box. Wherever it is, find it and make sure that the sustain pedal stop is working correctly. Never should the sustain pedal lift the damper levers so far as to engage the damper stop rail. Although we will cover the damper stop rail as step #45, the function of this rail is *not* to be the stop for the sustain pedal. There should be another means whereby the downward movement of the sustain pedal is inhibited before the damper levers engage the damper stop rail. Next month we will proceed with how to repair the pedals and trapwork including the proper lubrication of these parts.



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Mastic Beach, NY 11951

MARTIN, Edward F.
3 Baldwin Blvd.
Bayville, NY 11709

Mississippi-Gulf Chapter
FORETICH, Anthony G.
1811 21st Ave.
Gulfport, MS 39501

New Orleans Chapter
ELLIS, Lawrence S.
835 1/2 Esplanade #6
New Orleans, LA 70116

Utah Valley Chapter
GARRARD, Paul G.
1123 E. 960 S. #11
Provo, UT 84601

Allied Tradesman

Los Angeles Chapter
RANDT, Beau G.
Hill Calles Abeto
Thousand Oaks, CA 91360

San Francisco Chapter
BEPLER, Ron C.
126 Garretson Ave.
Rodeo, CA 94572

Student

Buffalo Chapter
KERR, Kathryn A.
2114 Cleveland Road
P.O. Box 68
East Pembroke, NY 14056

Eugene Chapter
BOURQUE, Kathleen S.
20051 Penn Road
Walton, OR 97490

Hampton Chapter
STOFSKI, Daniel J.
33 Pear Ave.
Newport News, VA 23607

San Diego Chapter
HARRYMAN, Mark R.
4457 Euclid Ave.
San Diego, CA 92115

Twin Cities Chapter
MANTHEY, Mary R.
7779 48th Ave. North
New Hope, MN 55428

SORENSEN, GERALYN A.
11663 Marigold St. NW
Coon Rapids, MN 55433

MEMBERSHIP POINTS

Five (5) points will be credited for bringing in a new registered technician, four (4) for an apprentice, three (3) for an allied tradesman and one (1) for all other memberships.

PRESIDENT'S CLUB

Those who achieve 15 points will receive the President's Club ribbon. At the Awards Banquet each will be presented with the 1983 President's Club pin, and the member who had the most points will be announced and honored.

RESTORER'S CLUB

Those who bring in a former member will receive the Restorer's Club award ribbon in addition to the point credits.

BOOSTER CLUB

Everyone who brings in a new member will receive the Booster Club ribbon at the convention.

NOTE:

Your name and your own chapter should be shown IN PRINT on the candidate's application on the line "recommended by," for your guaranteed full point credit. (Sometimes credit cannot be applied because the sponsor's name cannot be deciphered).

CORRECTIONS

Should there be a need for correction on the Booster Club or other lists, please notify the Home Office promptly. We want you all to receive full credit at all times.

Industry News . . .

Everett Publishes Braille Edition Of Service Technicians Manual

The Everett Piano Company, South Haven, Michigan, has announced that their current Service Technicians Manual is now also available in Braille. The 33-page Manual provides specifications and comprehensive information on regulation procedures, warranty service and parts ordering.

Commenting on the new Manual, customer service administrator Bill Brandom stated, "The percentage of blind people working within our industry is very high. We felt these people should be provided with a reference they can study and utilize at their own convenience."

The Manual was printed by the Clovernook Printing House for the Blind, a Cincinnati based firm that specializes in Braille publications and utilizes state-of-the-art technology in pro-

ducing all of its materials.

Free copies of the Braille Service Technicians Manual may be obtained by calling Bill Brandom at 1-800-253-3416 or by writing: Everett Piano Company, 900 Indiana Avenue, South Haven, Michigan 49090.

PRATT-READ ELECTS PRESIDENT, DIRECTORS

Ivoryton, CT — Following Pratt-Read Corporation's annual meeting Thursday, October 21, the directors elected Harwood B. Comstock president, replacing James H. Tucker, who was elected vice chairman of the board. Peter H. Comstock, who relinquished his post as chief executive officer, will continue as board chairman.

Board membership was increased from nine to eleven with the election of Harwood B. Comstock and Charles A. Ruhe, the company's secretary and treasurer, to directorships. Gerald B. LeVasseur was re-elected controller.

A reception for employees at the Ivoryton plant is planned for Sunday in recognition of Peter Comstock's retirement after 47 years of service to the company.

Pratt-Read is a diversified manufacturer of piano keys and actions, organ keys and switches, small tools and turned and shaped wood products. It also manufactures and markets small motors, timing devices and other electromechanical items. In July, the company announced acquisition of Sohmer & Co., Inc., and plans to manufacture Sohmer upright and grand pianos in Ivoryton. Pratt-Read securities are traded on the American Stock Exchange.

AUXILIARY EXCHANGE

AUXILIARY BOARD

Officers

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President

6520 Parker Lane
Indianapolis, IN 46220

BELVA (Mrs. Richard) FLEGLE

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Metairie, LA 70003

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Clifton, NJ 07012

GINNY (Mrs. Bob) RUSSELL

Treasurer

1414 Lander Road
Mayfield Heights, OH 44124

JEWELL (Mrs. Jack) SPRINKLE

Immediate Past President

6033 North 19th Road
Arlington, VA 22205



**Editor,
Auxiliary Exchange**

JULIE BERRY

6520 Parker Lane
Indianapolis, IN 46220

President's Message

Dear Friends and Members of the Auxiliary,

Except for those of you who live in Indianapolis, I don't see you at Christmastime. We never bump into each other while we are out shopping. We don't go caroling together or relax in front of the fireplace. In fact, some of you celebrate with palm trees and warm weather instead of snowball fights and fireplaces. And some of you celebrate holidays other than Christmas in December. Nevertheless, every Christmas we still feel very close to you all, and we are sending warm wishes in your direction.

During the year Ron and I have enjoyed being with you and sharing thoughts about the business we have in common. You have made our lives richer as we have gotten to know you. You help us to be proud of the work that we do, and you help us handle the business problems we run into just by letting us know that you run into those problems, too. You have shared your friendship with us when we meet in cities around the country. When we come to your town for a conference or convention you show us the finest hospitality.

We hope you have a very happy holiday at your house. Thank you for your gift of friendship to us. We look forward to meeting and becoming friends with even more of you in the years to come.

Season's Greetings!

Julie Berry

Dues Due

December is the time to pay Auxiliary dues for the coming year if you have not already done so. Fortunately, the dues are still just \$5 a year. Please send your money to Ginny Russell now so we don't have to go to the expense of billing you again. Every member should have received a bill for dues by now. In case you didn't receive your dues statement yet—or if you would like to join the Auxiliary—please go ahead and send your check to Ginny Russell, the Auxiliary's treasurer. It costs \$8.00 to join, and that will cover your dues for the calendar

year in which you join. Ginny's address is 1414 Lander Road, Mayfield Heights, OH 44124. Thank you.

The Importance Of Auxiliary Programs At Seminars

Each year I attend 3 or 4 regional seminars of the Piano Technicians Guild in addition to the annual convention. Every time we attend a seminar where no plans were made for the Auxiliary, I know the seminar could have been more successful.

Without a doubt the primary purpose of having Auxiliary activities is to benefit the spouses themselves; but an Auxiliary program will also draw more people to the conference. Many couples in this business enjoy spending time together. If a non-technician spouse can come to a conference and share the weekend with the technician they will both have a positive attitude about spending the time and money to attend.

If, on the other hand, there is no invitation for the spouse, no planned activity, the spouse will usually be less eager for the technicians to spend a whole weekend away from home.

If you look around you at a banquet you may notice many women present. Closer scrutiny reveals that they are not all technicians. The spouses (and almost all of them are women) who attend our conferences with technicians also support the social functions connected with conference. This support contributes to the overall success of the conference as well.

Perhaps a chapter in your area is planning a conference right now. If so, I hope you will encourage them to include the Auxiliary in their plans. If you ever need help planning a schedule for the Auxiliary, just let me know. - Julie Berry

Better Customer Communications

Sometimes we tend to think that if we can answer the phone and write down an address and tell people how much a tuning costs we will be able to handle customer communications without any big problems.

Unfortunately, we sometimes spend lots of money and effort urging people to call our business, only to handle them ineffectively or inefficiently once they call. Let's review some of the basics of effective customer communications:

First, it is important for us not to resent the customers for intruding when they call. Strange as that may seem, how many times have you wished the phone would quit ringing? How many times have you been called away from the bathtub or the basement or the backyard to answer the phone? How many times have you come home to a whole list of people to call back when all you wanted to do was sit down and relax?

We need to remember that each of those calls can bring us money which will pay our bills and finance our vacations. The calls aren't that bad once we go ahead and answer the phone. The people who call us to arrange for tunings and repair are normally very fine people. They are polite to us. They love music. They call us back for service year after year. If you picture your favorite customer or best friend is calling when you hear the phone ring, perhaps it will be easier to pop up and answer it with a smile in your voice.

If you use a phone machine you can have a little more freedom from your phone. You can catch calls that come in while you are away from the phone. You can call people back at a time that is convenient for you, after you have checked your schedule and looked through your files to see if you have done work for them before.

If you use a phone machine, let it become an extension of yourself. Speak on the tape in a relaxed manner. As you make your message sit back and relax, picture that you are having a conversation with someone in the room. Put a little music in the background for variety. And always be sure to call back people who leave messages and try to reach them promptly. Once your regular customers discover that you do return their calls they will become quite accustomed to your phone machine.

It is always a good idea to let your customers know when it is time to have their pianos tuned again, even if you feel you can get along fine without the additional business. Often the person who calls the piano technician is not the person who plays the piano. The person who calls you may not trust her/his own judgment about whether the piano is still in tune. If you have some kind of reminder system for letting the customer know it has been six months or a year since your technician last tuned the piano, the customer will usually thank you for the additional service.

Every piano service needs to develop a system that is compatible with the way the owners want to run their business. If you like the convenience of picking up the phone and making a few calls then you should develop a system for calling people back and booking appointments. If you prefer to avoid phone calls to see if people want to have their pianos tuned you should develop a system of reminder postcards or letters. Whatever system you use, it should be streamlined enough so it is easy to operate. Even the most inviting postcard will be a failure if you have no routine for sending out cards on a regular basis.

Another area of customer communications is "CALL-BACKS." Every technician receives a few call-backs now and then. The customer is often on the defensive. The technician is going to have to make a trip back to fix the problem. A person can easily get discouraged by a call-back, yet there are things you can do to make call-backs easier to handle. First, you need to be extremely receptive and polite to the person who calls back. At least they called you back instead of continuing to be frustrated because they think your technician didn't do the job right. Now you have a chance to make things right and keep the customer happy. Furthermore, if you meet the customer's complaint with kindness and understanding, the customer will let down some of her/his defenses and be easier to work with. If you let the customer know you care about fixing the problem and you set up a time to do just that, the problem has

been half solved. Once the technician fixes the problem the call-back can be forgotten. It is important to remember that a dissatisfied customer tends to tell more people about you than a satisfied customer. A business needs to do all it can to keep the customers satisfied.

We need to remember that our customers are shopping for someone they can trust with their piano and in their home. Before they know you or hire you they have certain reservations. Anything you can do to reassure them and win their confidence will be to your advantage. Once you have convinced them that your technician will be as interested in their piano as they are, they will relax and be easier to deal with as a customer. Think how relieved you are when you find a mechanic who likes your car and wants to get it into shape for you. Anything we can do to build the customer's trust in the technician will help the appointments of the day go more smoothly. Often you can build customer trust by talking about the piano, letting the customer know that you know what kinds of repairs the piano might need—even if you are not the technician. Customers figure that a receptionist who can talk about problems pianos have is an indication that the technician will know what he/she is doing.

Perhaps this article has encouraged you to examine the way you deal with your technician's customers. Sometimes we deal with customers without thinking about the way we sound. Any business can profit from an examination of its standard procedures.

Classified Advertising

CLASSIFIED ADVERTISING RATES are 25 cents per word with a \$7.50 minimum. Full payment must accompany insertion request. Closing date for ads is six weeks prior to the month of publication.

Box numbers and zip codes count as one word. Telephone numbers count as two words. Names of cities and states count as one word each.

Send check or money order (U.S. funds), made payable to the Piano Technicians Guild, to Classified Ads, THE JOURNAL, 1515 Dexter Avenue North, Seattle, WA 98109.

The Journal does NOT provide blind box service. Please include a mailing address and/or telephone number with your ad.

Ads appearing in this journal are not necessarily an official endorsement of the services or products listed.

for sale

A PIANO MAY LOOK GOOD, BUT THEN... LOOKS ARE DECEIVING. Quality soundboard installation by those who care. **Richmond Piano Rebuilders, 3133 W. Cary St., Richmond, VA. 23221 (804) 358-1929.**

YOU DON'T ARGUE WITH SUCCESS!

That's why hundreds of tuner-technicians insist that their customers own copies of THE PIANO OWNER'S GUIDE. Softbound \$3.95. Hardbound \$6.95. Trade discounts, terms. Inquiries welcome. **APEX PIANO PUBLISHERS, 1014 Kentwood Drive, Mountain Home, AR 72653. (501) 425-7057.**

Classified Advertising

A GUIDE TO RESTRINGING will guide you safely through a restringing job with confidence. Increase your income with fully re-conditioned, fully re-built, fine old pianos, now almost forgotten. They're out there somewhere in our good old USA, ten million of them! Why not make up for lost income due to the present recession. **Now's** the time, not **later**. The price? Less than the cost of a single tuning. **A GUIDE TO RESTRINGING**, enlarged second edition. Perfect Binding, \$30.00, hard binding, \$35.00. **Order from: John W. Travis, P.O. Box 5359-0359, Takoma Park, MD 20912.**

MARSHALL & WENDELL Player Grand #105584 Ampico. Untampered with, very nice restorable condition. \$4,200.00. **Richmond Piano Builders, Inc., 3133 W. Cary St., Richmond, VA 23221. Phone (804) 358-1929.**

COMPLETE HOME STUDY COURSE IN Piano Tuning, Regulating and Repairing. Write or call for free brochure. **Aubrey Willis School of Piano Tuning, P.O. Drawer 15190, Orlando, FL 32858. Phone: (305) 299-3690.**

MARANTZ PIANOCORDER VORSETZER REPRODUCER, Model P 200, New, full warranty, four albums of tapes. \$1100.00 plus shipping. **Snyders Piano Shop, Inc., 719 Furnace St., Robeson, PA 19551, (215) 693-5732.**

FOR SALE: MODIFIED SIGHT-O-TUNERS. Available immediately. 1/10 cent accuracy on coarse dial, 1/100 cent on fine. Complete with oscillator and filter outputs, magnetic pickup and auxiliary input jacks, detailed instruction booklet using The Octave Division Temperament system. Guaranteed one year. Used Sight-O-Tuners accepted on trade or purchased outright. Unmodified also available. Or send your own machine to be modified with Bournes ten-turn potentiometers. Call for quote. **David Pitsch, (801) 225-0156.**

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 W. Washington Blvd., Los Angeles, CA 90018. Telephone: (213) 883-9643.**

KEY RECOVERING MACHINES for sale. Prices on request. Send self-addressed envelope. Or, build your own—send \$15.00 for plans, photos, instructions (refund w/purchase of machine). **Solenberger Piano Service, 1551 Lynn Court, Santa Rosa, CA 95405.**

LEARN HOW TO REMOVE AND REPLACE SOUNDBOARDS YOURSELF. Video tape and printed instructions. **Victor Video, 6825 Germantown Avenue, Philadelphia, PA 19119. \$94.75 (215) 438-7038.**

ZUCKERMANN HARPSICHORD KITS — A real challenge for the interested technician. Factory direct shipment at factory prices. Troubleshooting and advice for kit builders. Authorized Agent: **Yves A. Feder, R.T.T. Harpsichord Workshops, 2 North Chestnut Hill, Killingworth, CT 06417, Telephone (203) 663-1811.**

FOR SALE: Morton Bros. & Co. — London, upright, 48" high, serial 10891 — dates from around 1890-1895, 7 octave, bird cage action, straight strung, best offer, phone **(715) 275-3447 after 6 pm, or write Ed Reineck, Summit Lake, WI 54485.**

ACCURATE ELECTRONIC TUNING!! Substantial improvement over any other published method. Clearly-written instructions. Easy-to-learn routine. Designed for use with Hale Sight-O-Tuner - can be adapted for others. \$10.00. **Don Hardin, 2620 Cypress Ave., Stockton, CA 95207.**

THE BUSINESS OF PIANO TUNING AND REPAIR. A comprehensive text written exclusively for your piano tuning business and finances. "A must for every tuners library." \$12.50. **ELREC INT., 3605 Artic No. 512, Anchorage, AK 99503.**

FOR SALE: STEINWAY UPRIGHT #194604. Style SP with Metrostyle Thermidist Player, excellent, untampered with original condition, \$3400.00. **Richmond Piano, 3133 W. Cary St., Richmond, VA. 23221 (804) 358-1929.**

miscellaneous

CONSUMER GUIDE TO PIANOS. I am conducting an extensive survey of new pianos: their quality, service problems, business practices, etc. The results will be published next year by a major publisher. If you regularly service or sell new or near-new pianos, work in a piano factory, or otherwise have information, expertise, or opinions which you would be willing to share, please send your name, address, and phone number and I will contact you. All sources will be kept confidential. **Larry Fine, Piano Technician, P.O. Box 465, Jamaica Plain, MA 02130.**

SIGHT-O-TUNER SERVICE. Calibration, repairs, and modifications. Write or phone **Richard Weinberger, 14130 Alta Vista, Saratoga, CA 95070. Phone (408) 867-4513.**

SIGHT-O-TUNER MODIFICATION. For the first time - INTERNAL ERROR COMPENSATION. The "Error" discussed by Steve Fairchild has been compensated internally, freeing both dials for measuring. No confusing Error Compensation Chart or third dial. Bourns 10-turn Knoppots give increments of .01"! Now tune with even higher accuracy in less time. Cleaning, calibration, guarantee, and temperament systems of leading concert technicians included. Best prices - why pay more? Repairs accepted. Methods proven by full-time concert RTT with electronic experience. **Careful - don't get caught off pitch! RICK BALDASSIN, (801) 374-2887. Not affiliated with David Pitsch.**

wanted

WANTED: Krakauer 50" Upright. Prefer not rebuilt. **Howard Graves, Box 301, Berlin, Ohio 44610. (216) 893-2722.**

WANTED: All early PTG Journals up to 1969. **(509) 677-3326. Earl Franz, Box 321, Lind, WA 99341.**

WANTED MASON & HAMLIN OR STEINWAY GRAND. Want one that was a player. Have player mechanism to install. Also want player mechanism or parts of these units. **Brady, 4609 Cranbrook, Indianapolis, IN 46250 (317) 259-4305, after 5 pm. (317) 849-1469.**

help wanted

PIANO TECHNICIANS HIGHLY SKILLED in all phases of rebuilding & refinishing pianos. Major central Florida dealer. **WAREHOUSE PIANOS INC., 755 Hwy 17-92, Fern Park, FL. 32730, (305) 331-6666. Mrs. Miller.**

PIANO TUNER/TECHNICIAN, Full-time — Combination tuning and shop time. Send brief resume to **Henri's Music, P.O. Box 3589, Green Bay, WI 54303.**

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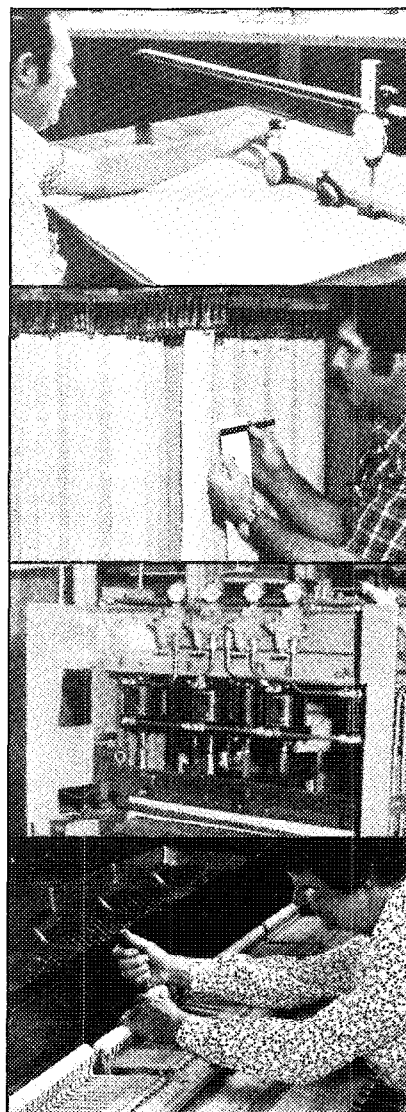
You can see why it sounds better

We firmly believe that hammer making is one of the most critical of all piano building processes. That's why we spend significant extra dollars in materials and time in the manufacture of all of our own hammers for both vertical and grand pianos.

Our special concern starts with materials. We pay a premium price for 100% virgin wool felt made to our standards for weight, thickness, taper, size and hardness. To guarantee that all hammer felt meets our standards, we subject every sheet we receive to stringent testing before accepting it for production.

The same extra concern continues in our exclusive construction procedures. First felt is treated in our moisture-conditioning chamber until it reaches a prescribed moisture content. Then the felt is placed in a special hammer press, designed and built by our engineers. This press has preset closing pressure and automatic cycling for consistency. We use a special thermosetting glue to secure the felt to the moldings. And we check throughout the process to insure that the proper felt hardness is retained.

The object of all this extra care in design and construction of hammers is tone quality...and tone quality that is consistent from note to note.



Fifth in a series of informative ads on piano tone published by Baldwin Piano & Organ Company exclusively for the benefit of piano technicians.

Baldwin® — *Leading the way through research*

BALDWIN SPECIAL SERVICE—You may order Baldwin replacement parts at any time our office is closed—nights, weekends, and holidays—by dialing direct (513) 852-7913. Your verbal order will be recorded on our automatic answering service and processed the next working day.

The Interchangeable Key

**If it's a Wurlitzer,
it's designed and built
with the technician in mind.**

While most piano keys that are broken must be replaced with handmade keys, Wurlitzer has designed, engineered and built their keys to be interchangeable. Yes, you can order a replacement key for any Wurlitzer Piano and *it will fit!*

Wurlitzer believes it is important to help make your job a little easier and to save you and your customers the aggravation of delays in parts delivery and the additional aggravation of reorder, or further delay because of ill-fit.

That's why Wurlitzer key blanks are stored in a 7% humidity before they are machined in a humidity controlled atmosphere of 7%. The routing operation that follows produces the most accurately cut keys in the industry, routing all critical holes and maintaining accuracy at $\pm .001$ of an inch. Consider how accurate that is when the human hair is .003 of an inch!

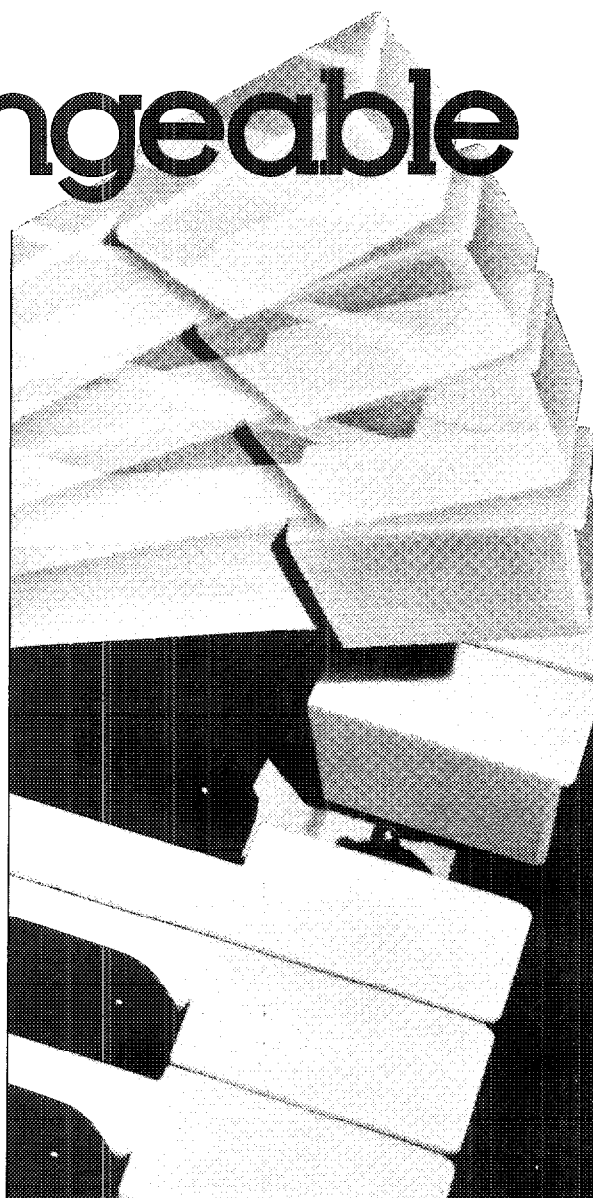
To insure further the quality and dependability of our keys, we try to locate any potential problems in advance—before they become problems for you. For example, keys that will warp in the field will do so as a response to changing atmospheric conditions—heat and humidity. To find those keys that have a grain characteristic that may bring about warping, keyboards are put in a heat chamber for 24 hours during which the moisture content of the wood is reduced even further. This process brings about warping that could take months to develop; thus discovering the problem before the instrument is in the field. After 24 hours in the chamber, the keyboards are inspected by skilled people who can detect any warping that has taken place. These keys are then replaced with keys that have already been tested.

The Wurlitzer key is indeed interchangeable because it is built to the most exacting standards; but, in addition, our keyboards go through a leveling operation with special machinery and skilled operators that make sure the touch is even throughout.

All of this, of course, provides a more uniform and dependable piano that can make your job a little less frustrating.

Our continuing commitment to you, the Technician, is apparent in our ongoing willingness to teach and train. Our key technical people attend PTG meetings and conventions and conduct training sessions. Our service department continues their service seminars. Our technical staff is at your service to provide any assistance you might need.

We recognize that a quality instrument must be well maintained. That's why Wurlitzer Pianos are designed, engineered and built by high technology craftsmen at Wurlitzer with you in mind.



Wurlitzer Hot Lines:

Call toll-free between 8:00 A.M. and 4:30 P.M.

800/435-2930

For parts call Code-A-Phone:

800/435-6954

In Illinois call:

815/756-2771

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The Music People

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Piano Technicians Journal

UPDATE

December 1982

Certificates

Certificates The engraved certificates for new Registered Technicians since the last 1982 distribution have been mailed showing the 1982 certificate date. Members classified before that previous mailing have already received a certificate. Only one is issued to each Registered Technician.

Gold Seals

Gold Seals A gold seal bearing the year date will be sent to every Registered Technician with the 1983 membership card when annual dues have been paid. The seal can be placed over the date on the certificate to indicate that the member is a Registered Technician in good standing with the Guild this year.

Change In Public Relations Committee

Please note: John H. Baird, 76 North Country Club Road, Decatur, Illinois 62421 is a member of this committee, not John O. Baird.

Nominations For The Board

In compliance with the Piano Technicians Guild bylaws, the Piano Technicians Guild nominating committee is requesting nominations for all 1983-1984 elective positions on the Piano Technicians Guild Executive Board: president, vice president, treasurer-secretary and all regional vice presidents.

A chapter may submit a nomination and any member in good standing may offer his or her own name for consideration by the committee.

When nominee suggestions are received by this committee, the proposed member will be sent a consent-to-serve form and information on the duties of the office. Each nominee may submit no more than 15 lines of typed qualifications to the nominating committee for consideration together with the signed, consent-to-serve form.

The committee will prepare a list of nominees showing the committee's selections for president, vice president and treasurer-secretary. All nominations received for the three offices, and for the offices of the six regional vice presidents will appear in the May 1983 issue of the *Journal* together with the committee's selection. In this way, the membership will be given information on every nomination received by the committee.

Please read the Guild bylaws, pages 8 and 9 for full information on the required nominations procedure.

Nominations *must* be submitted *no later than March 5* to:

James Coleman, Sr.
4 W. Del Rio
Tempe, AZ 85282
(206) 966-9159

Chapter Achievement Awards At The 1983 New Orleans Convention

As most of you are aware, awards are made each year to Chapters which have shown outstanding achievement. They are made in four categories, based on Chapter size. The awards are arrived at solely through data supplied in the monthly reports the Chapters send to the Chapter Management and Achievement Committee.

In order for these awards to be meaningful, and really reflect what is happening, it is very important that we have a broad-based support for this program. The forms, which are supplied by the home office, are currently evaluated with the hope that they can be made simpler and easier to use. After the forms are filled out they should now be sent to:

Guy McKay
3076 Hargeo Drive
Indianapolis, IN 46217

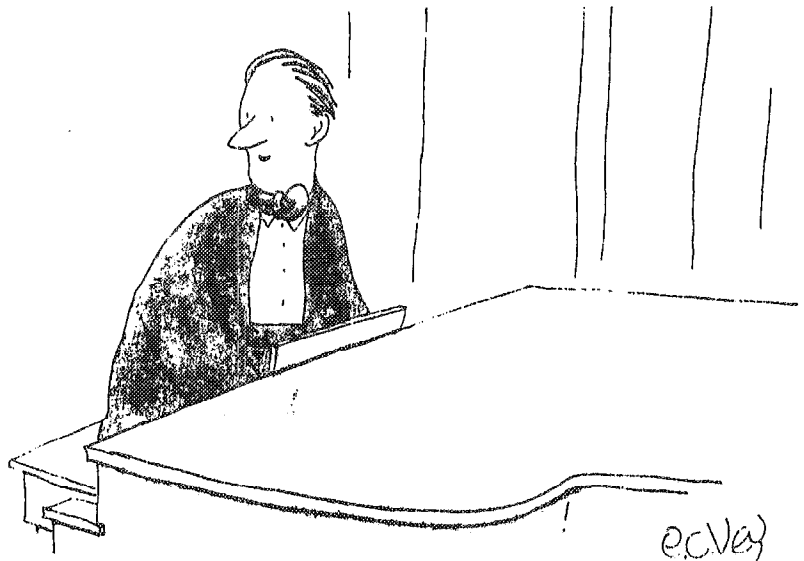
PTG Calendar

1982	DECEMBER 1	Deadline for Home Office receipt of committee reports for typing.
	DECEMBER 1	Last date for Home Office receipt of Board agenda items.
	DECEMBER 15	Final date for January Journal copy.
	DECEMBER 31	Closing date for Hall of Fame nominations to Dick Bittinger, Committee Chairman.
1983	JANUARY 1	1983 Annual dues are due.
	JANUARY 15-16	Midterm Piano Technician Guild Board of Directors meeting in New Orleans
	JANUARY 15	Final date for February Journal copy.
	JANUARY 21-23	NAMM Winter Market, Anaheim Convention Center, Anaheim California.
	MARCH 20-25	Music Teacher's National Association Convention, Hyatt Regency, Houston Texas

WE HAVE MOVED . . .

Your Piano Technicians Guild Home Office has moved a few blocks north of the former address to: **1515 Dexter Avenue North, Seattle, Washington 98109.**

The Piano Technicians Guild telephone number remains the same **(206) 283-7440** and you may call us also at **(206) 282-1991.**



HAVE YOU MOVED? . . .

If you have moved recently or are planning a change of address, please read this:

"I'd like to dedicate this next piece to all those dead elephants who helped make this keyboard possible."

1. **JOURNAL LABELS** are printed on the 20th of the month before the date of the *Journal* issue. (e.g., labels are printed December 20th for the January *Journal* issue.)
2. **NOTICE** The Home Office must have a minimum of seven days notice of a change of address in order to get the change into the computer. Therefore notice of a new address must reach the Home Office by the 13th of the month. (e.g., by December 13th for the January *Journal* issue.)
3. **DESTROYED** If your *Journal* is sent to your old address the post office will destroy it and then send a notice that you are not at your address, and charge us 25¢ for each notice.
4. **DELIVERY** You can be sure of delivery, even when you move, by notifying the post office *in writing* on their regular change-of-address card that you want magazines delivered. There is a small charge but you will receive your *Journals*.
5. **NON-DELIVERY** If your *Journals* are destroyed because we did not receive your change of address notice in time, you may request a duplicate copy. We must charge you shipping and postage for this extra service as there is a board policy requiring that we do so.
6. **TELEPHONE** Please include your new telephone number when you send a change of address.

HOME OFFICE TIPS TO SPEED YOUR MEMBER APPLICATIONS & RECLASSIFICATIONS

1. **APPLICATIONS** The chapter must complete the grey section in the upper right hand portion of the application form before sending to the Home Office. We are unable to process a new member unless we have:
 - a. The name of the chapter
 - b. The classification for the member as approved by the chapter.
2. **ENTRY FEES** Please check that the correct amount is attached to the application:

Registered Technician, Apprentice and Allied Tradesman \$15.00
The chapter collects \$30.00 but please send only \$15.00 to the Home Office as the remaining \$15.00 belongs to the chapter.
If \$30.00 entry fee is sent, then the member will receive the \$15.00 credit towards the Guild dues.
3. **STUDENTS** Send the full \$60.00 annual dues with a student member application. The chapter may assess up to an additional \$20.00 fees which the chapter keeps.
4. **ASSOCIATE AND AFFILIATE** Send no funds with the application. The Home Office will pro-rate the annual dues for these applicants and bill them.
4. **RECLASSIFICATION** Be sure that the required forms and fees are attached to the reclassification form. *Do not use a new member application form.* There will be delays if the correct papers are not attached. So *first* check that your chapter has completed the required papers and sent them to the Home Office. We cannot process your reclassification unless we have all of the required papers.

All applications and upgrade papers are processed promptly in your Home Office.

1983 GUILD DUES

1983 Guild dues remain the same as for 1982 dues. Billings for 1983 dues were sent end of November. Student's dues are due on the anniversary date of entry into the Guild.

DUES

Registered Technicians, Apprentices, and Allied Tradesmen	\$114.00
Associate Members and Affiliate Members	\$ 57.00
Chapter Sustaining Members and Chapter Dues Waivers	\$ 38.00
Membership Insurance Pledged to the Guild	\$ 57.00

REMEMBER: Annual dues must be paid in one sum as the partial payment method was cancelled by the delegates in council session in 1981.

Please pay the full amount shown on your annual billing.

CHAPTER DUES If your chapter has requested the Home Office to collect your chapter dues the amount of the chapter dues will be clearly indicated on your annual Guild Dues Billing. Please pay the total shown as the chapter dues are automatically credited first on receipt of payment.

NOTE: Do not send chapter dues *unless* your chapter has already signed the official collection notice.

**Gene Elfes, President
Northern Virginia
Chapter Newsletter**

FROM THE PRESIDENT

During the last month, one of our chapter members visited me in my shop while I was reconditioning a customer's action. The reconditioning, among other things, consisted of replacing bridle tapes, reshaping hammers, pulling and cleaning the damper rod, and lubricating the various friction points. In the process of doing this work, certain "custom" tools and methods were employed that were foreign to my visitor. However, the methods I use are designed to do what I hope is top-quality work in the least amount of time. Hopefully my fellow technician picked up a few ideas that will help him with his own work.

Two of his questions caught my attention. He inquired (1) if I did the aforementioned job often, and (2) if I had a hard time selling the job to the customer. Also, he said that he had mentioned some work needed to one of his own customers' piano... and low and behold, the customer bought it.

Recently in the Washington Post a columnist had quoted Neeman Marcus, who stated that retailing as he knew it had gone to the dogs, or words to that effect. It implied that too often it was left to the customer to sell himself an item of service then find a sales person to collect the money. The columnist traveled to several stores to verify the observations of Mr. Marcus.

We tuner-technicians have expended considerable time, effort, and expense to acquire and upgrade our abilities. Hopefully we have become more than just tuners. If we don't properly sell our skills to our customers, we will remain just that... tuners.

To my way of thinking, proper selling of our services means more than grumbling to ourselves about the noisy, unregulated, miserably neglected piano in front of us while we attempt to tune it. Perhaps if we inform the customer of various faults in the piano, explain what could be done to improve it, and even show him what an improvement one note, well regulated and voiced, makes... just perhaps, the customer will "buy" the work needed. When such work is properly completed, the customer will be pleased, and future service on that piano will certainly be more pleasant to the *tuner-technician*. And, just as important, there is the financial satisfaction of more money in one's pocket.

Now if I could just figure out how to make a spinet perform like a nine-foot grand...

Please forward all monthly Chapter Achievement reports to:

**Thomas A. Rodgers, Chairman
Box 4006 First Street
Stevens Point, WI 54481**

technicians a copy of the October issue, as well as Mason's book on "Piano Parts" and Reblitz's book on "Piano Repairing".

Another problem in piano manufacturing was the correct amount of downbearing on the bridges. I suggested a downbearing gauge, such as sold in piano supply houses. The Chinese technicians and builders are anxious to learn everything they can, and we may see two or three of them at the Washington, D.C. Convention. Any invitation and all arrangements must be made through the government.

PTG Life Insurance

All Registered Technicians, Apprentices and Allied Tradesmen are automatically covered for \$1,000 Life insurance, \$2,000 accidental death benefit.

Is your preferred beneficiary listed with the Home Office? If there has been a change since your first signed the insurance card please call or write for a new card to bring your insurance account up-to-date.

CHAPTER NOTES

The **Los Angeles Chapter's** October meeting opened with President Elva Brown giving the sad announcement of the death of Mr. Wilhelm Dege, age 92. He kept up with his business of tuning until last spring when he suffered a stroke. Some fine tributes were spoken about him by members of the chapter, after which we all stood for a minute of silent tribute to this veteran tuner-technician. His son Ernie Dege and grandson Bill complete the three generations of tuner-technicians to this date.

Our "technical appetizer" was given by Alan Slater on the subject of "The Test Blow." This led into conversations and remarks from the audience, all of which were very helpful. It was an interesting lesson.

Our technical session was given by Steve Woodyard of the Fender-Rhodes Co. He gave much information, which is printed in the Rhodes manual, available on request. We thank you Steve.

—Harry Berg

On October 23rd and 24th, the **San Francisco East Bay Chapter** held its first seminar on Upright Action Restoration. Twenty-one technicians and students of piano technology attended. Assisting Sid Stone in the seminar were RTT Lola Wondra and Allied Tradesman Terry Benson. Ten actions were brought to be "overhauled." From this seminar the East Bay Chapter realized a profit of a thousand dollars.

The regular monthly meeting of the chapter was held on the first night of the seminar, instead of the usual third Thursday. Those attending were privileged to see "the most unusual vertical action ever build."

This new chapter, with an average attendance of 20, is already planning on a Spring Seminar and another next Fall.

—Sid Stone

Twenty-eight members and guests of the **New York City Chapter** met for the October meeting in the 3rd Street Music School. Plans for our spring seminar with Walter Drasche are progressing, but we need a few volunteers to help with the publicity and mailing.

The question arose of how to handle non-paying clients, particularly clubs and schools. We discussed the possibility of compiling a "defaulters list" as



Members of the San Francisco East Bay Chapter attending its first seminar on Upright Action Restoration.

a warning to other members. Barbara Silver is checking into the legality of such a move. Leopold Holder is working on a list of suggestions of things to do to ensure payment for our services (short of going back and de-tuning the piano!).

The technical part of the meeting was a slide presentation by our National Vice President, Charles Huether, on the history of piano manufacturing in New York City. Many years ago, lower Manhattan and the South Bronx were filled with dozens of piano factories, and some of the buildings still bear traces of the old signs painted on them. All in all, it was a most productive and interesting evening.

After a brief intermission of the October meeting of the **Southwest Florida Chapter**, we assembled to hear Walter Kerber present "Tuning as a Business." His wisdom in business and his knowledge of the tuning profession uniquely qualify Walter to teach the subject. The outline of his approach is as follows:

1. *You must like yourself.*
2. *Rough being your own boss.*
3. *Study to stay current.*
4. *Highlight your business card.*
5. *Do a quality job.*
6. *Take charge of your business.*
7. *Income is related to sales ability.*
8. *Market conditioning.*
9. *Leg work.*
10. *Rework Pianos.*
11. *Word of mouth.*
12. *Assess need for helpers.*
13. *Keep first bill reasonable.*
14. *Repeat business.*
15. *Canvas areas.*
16. *Send thank you note.*
17. *Next time reminder cards.*

The September meeting highlights of the **Ottawa, Canada Chapter** features a film which dealt with flanges and center pins. One interesting point made was the fact that one should be familiar with those techniques recommended by individual manufacturers, especially in new pianos, in order not to jeopardize the validity of their respective warranty agreements.

Paul Koltan reviewed the fine points of pitch raising, both from the standpoints of accuracy and speed — both of which he ably demonstrated.

Entertainment Section . . . Film Reviews

The film shown at September's Chapter Meeting is worthy of comment, indeed, and gets a ***½ rating for its sweeping, pseudo-epic presentation of pianoforte imagery — shown explicitly but always tastefully. On the whole, in fact, the film operates much more on the suggestive level apart from the opening scene, which shows a graphic close-up of an enormous, glistening center-pin, making its way (to the strains of Also Sprach Zarathustra) into a frayed, blood-red entwinement of bushing cloth. All this represents, of course — to this reviewer, at least — an obvious post-Freudian analysis of contemporary industrial civilization on the brink of nuclear death-wish fulfillment. (One special effect involved the blowing up of a hammer.) It all goes to show that in the hands of a craftsman, even the most taken-for-granted sights can suddenly spring to life, laden with heavy and profound inner meaning. Don't you agree?

—Lee Harris