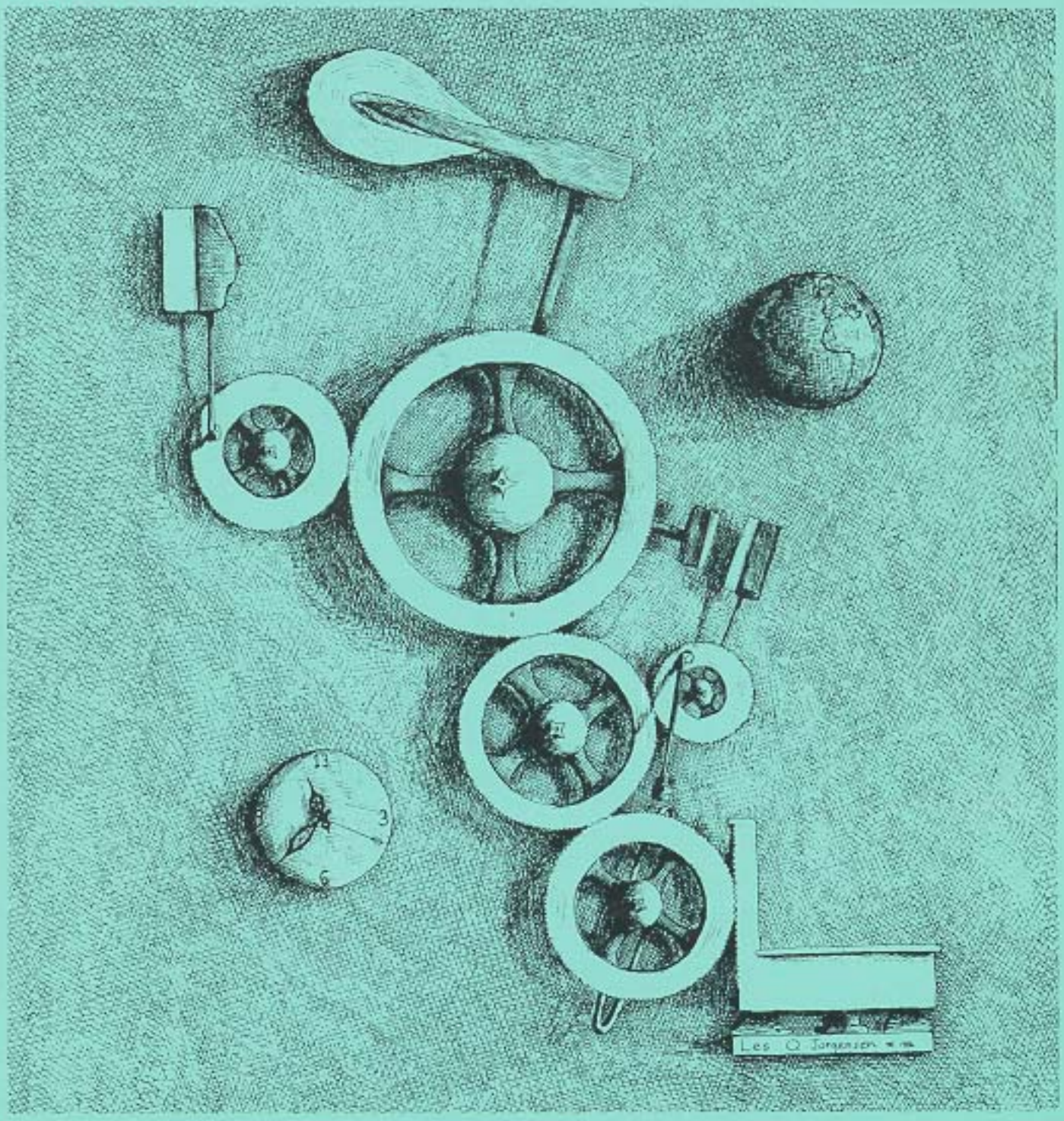
Piano Technicians Journal

August 1982

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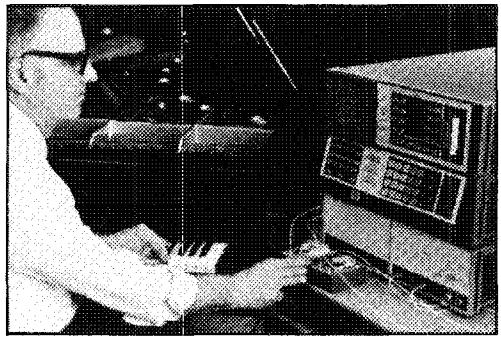

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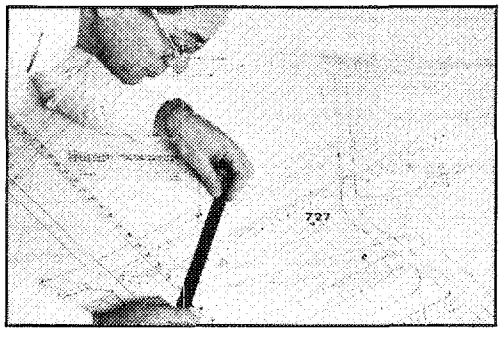

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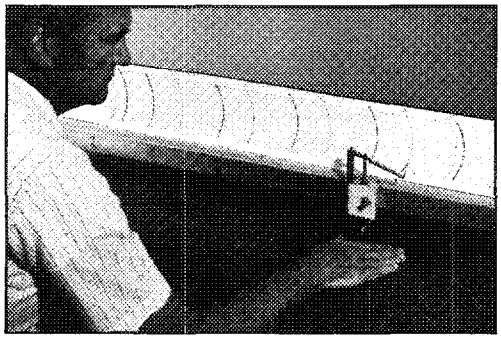

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Piano Technicians Journal

Official Publication of the Piano Technicians Guild

August 1982
Volume 25, Number 8

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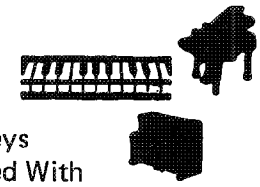

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Editorial

Don L. Santy
Executive Editor

Guilds

The 12th century saw very rapid and impressive growth in GUILDS. They became very powerful in terms of representing crafts and craftsmanship. Guilds were never organized by "class" but always by profession and reflected the medieval desire for an orderly society. Their primary functions were to control professions or trades in a given locality; to set standards of workmanship and price; to prevent encroachments from other localities and to establish status for members in society. In the 17th century, Guilds disintegrated as governments became stronger. Their purpose was slowly eroded and laws limited their effectiveness. Let us keep a wary eye on any and all conditions, which will prohibit people who choose a profession and/or craft, from practicing in the marketplace and functioning as a strong and viable entity for each others' benefit.

The word "Guild" is generally identified with "craft" and one which has ancient roots and historical value. It denotes a highly specialized area of skill which one has acquired on a personal basis, over a long period of time.

Aside from its historical implications, the word can easily be applied to what we now know as the typical trade or professional association. While the nomenclature is slightly different, the basic underlying function and purpose remains pretty much the same.

Organizational characteristics have common threads running through them. All have their detractors and their own particular brand of complacency to deal with. All have their valued "hard core" membership who dig in and do the pick and shovel work, take on positions of leadership and work on committees. All have communication problems. Not only among their own membership but among their common industry and those who do not belong and will not participate for various reasons.

Have you any idea how many organizations are just like ours? There is the tendency for members to say, "Yes, but *we* are different." It is true, every organization has its own unique characteristics but also share many similarities. You have only to become a joiner and you won't help but notice that basically the same problems are being discussed, the same issues are addressed and about the same personalities are rising to the surface.

Alexis deTocqueville, a French observer of the American scene in the mid-1800's, remarked in his writings that Americans were a nation of joiners. I suppose this observation could be considered quite perceptive since every time two people come together with a common problem, interest or cause, they form an organization and invite others to join.

There are 15,000 organizations representing trades and professions in this country alone, to say nothing of the hundreds of thousands of other groups representing every conceivable type of problem, interest, cause and belief. Add to this impressive figure other countries around the world and you can get a slight idea of the magnitude.

At any given time, in any community, people are meeting with people. They are arguing, cooperating, planning, discussing, sharing, helping, politiking and engaged in a multitude of causes: good, bad or indifferent.

The medical fraternity is the all-time champion in organizations. There are over 1,200 different medical societies representing every conceivable segment of the human body and every disease known to man and beast.

Just dig up the Encyclopedia of Associations sometime if you want to spend an interesting and amusing evening. The listings of organizations range from the incomprehensible to the ridiculous. You will find organiza-

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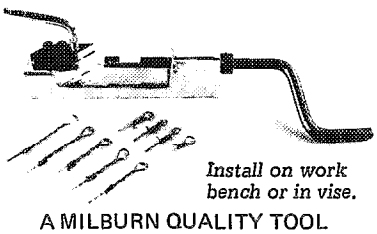

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tions located right here in the same city as your Home Office, such as the Creeping and Chewing Fescue Association, the Primateology Association, The Lesbian Mother's Defense Association and the Sheep and Goat Practitioners.

In other parts of the country you will find the Carbolic Acid Association and the American Dowsers Association. No, it is not a drinkers club. It is made up of people who are able to locate goodies under ground such as water and minerals.

There are also hundreds of ethnic groups, such as the Polish Dentists Association. This is made up of dentists of Polish extraction. I seriously doubt if there is any condition known to man that an organization hasn't been formed to deal with.

These groups are all doing just what we are; doing good work for those who belong. This good work is also being accomplished for those who do not belong whether they are aware of it or not. Such is the way with the free enterprise system. It is a matter of choice.

For out and out unabated enthusiasm, I think the group who settled in the front yard of my neighbors house a few years ago takes the cake. They call themselves, "The Society of Creative Anachronism." I woke up in the morning to the sound of men shouting and steel crashing against steel. I jumped out of bed and looked down on a scene right out of King Arthur's Court. Gaily colored tents were set up all over the place with banners waving in the breeze. Ladies strolling around the lawn with long colorful dresses and tall peaked hats with ribbons waving from the tops. Kids were rolling over the grass laughing and playing but dressed in medieval style. The men, fully dressed in chain and armor, were off to the side trying to kill each other with sword, lance, and mace. They were slashing, pounding, stabbing and jabbing with great vigor and much grunting, sweating and swearing. Some were laid out on the grass nursing their wounds and others were being hauled off on stretchers. They were serious! They were trying to recreate the days of knighthood and fully intended to do it right just short of killing each other. Now that's what I call dedication.

Karl Marx once said, "Religion is the opiate of the people." He must have never heard of the malady called "organizationitis." It is the organizations people belong to that could often be called the opiate of the people. They can take over lives and families. They can build business but paradoxically can ruin them. They can innundate and mobilize our lives, monopolize our attention and can absorb all of our time. They can provide all of our social, business and spiritual needs, and educate our children. They can provide us with security, wealth, friends, opportunities, make the difference between success and failure and ultimately play a hand in determining the last rites and the disposition of our remains. □

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PRESIDENT'S MESSAGE

Ernest Preuitt
President

As I write these words on Memorial Day, 1982, the sense of assuming responsibility for guidance of the Piano Technicians Guild appears ever more eminent. The motivation of awareness presses in upon me, and it is time to cease envisioning and begin acting to commit those visions to reality.

Each of us has his own visions, dreams, hopes. If we are realists, we recognize these for what they are — visions, dreams, hopes. Does this mean we shall not act to bring about their fulfillment? No! For each time we are struck down and begin again, that new beginning brings us closer to our goal.

Each thought carries the seed of an act, either positive or negative. If negative, we act not only against ourselves but our larger group. If positive, we also act for ourselves and all around us.

All this may seem a little melodramatic in regard to the Piano Technicians Guild. But how true it is, as the individual goes, so goes the corporate entity. Unless each one assumes responsibility for him or her self, one has no basis for corporate support.

Some are still crying, "But I don't need corporate support!" How ridiculous. If I were not sorry for them, I would laugh at them.

On the other hand I am not so sorry as frustrated. Yet even this feeling is evaporating. There are many bright young technicians interested in the Guild as well as joining it. They hold within them the seed of tomorrow's corporate entity. Interested as they are, and as yet inexperienced, let us not discourage them in a variety of ways — e.g., "It's never been done that way before," "We tried that once and it didn't work," "You don't under-

Coming Events

Notices of seminars will be accepted for insertion in THE JOURNAL no sooner than six months before an event. In addition to the listing below, your seminar may be publicized through one free display ad, two columns by two inches deep. It is the responsibility of the advertiser to submit copy for the ad to the Home Office. Material must be received six weeks prior to the publication of THE JOURNAL.
Note: All seminar dates must be approved by the Conference Seminar Committee. Please submit the appropriate information on the Request for Seminar Approval Form which may be obtained from the Home Office.

UPCOMING CONVENTIONS OF THE PIANO TECHNICIANS GUILD

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September 18-19, 1982
Milwaukee Days
Park East Hotel
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Contact: Donald Valley
P.O. Box 65
Pensacola, FL 32591

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OHIO STATE CONFERENCE
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Contact: Kevin Leary
18817 Hilliard Blvd
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October 15-18, 1982
TEXAS STATE CONVENTION
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Contact: Karla Pfennig
5623 Shoal Creek Blvd
Austin, TX 78756

October 29-31, 1982
NEW YORK STATE CONVENTION
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Albany, New York

Contact: Evan Tublitz
1108 Sawyer Rd.
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December 3, 4, 5, 1982
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stand the situation," etc. Let's encourage them to participate, to make their mistakes, and perhaps become better masters of the trade than ourselves. For what are teachers for, if not to bring the pupils to the point of no longer needing them.?

As we begin this new "corporate year," let's seek one another in growth, technical mastery, corporeal entity, companionship.

Allow me to touch briefly on each of these subjects. Perhaps later on I will have something to say in depth about each one.

Growth — for now, my main concern is numerical. RVPs need to promote examination procedures within their regions.

Technical mastery — attend seminars and conventions. Where else are you going to learn new *and* tested, proven procedures?

Corporeal entity — support the Piano Technicians Guild!

Companionship — all of the above.

We welcome all new officers and Regional Vice Presidents. I feel like an "old hand," having been a member of the Guild since 1962, and elected to the Board in 1975. And a special welcome to all newer members.

Let's have a great year! □

Prosperity

John Baird, President
Central Illinois Chapter

"Prosperity?" Who are the ones in our business who achieve it?

When I look around, prosperity seems inevitably linked to those who strive to improve their skills and knowledge. It seems to come to those who maintain high work standards and business ethics, and who acquire the PTG spirit of sharing knowledge.

Those who are happy and prosperous seem to be considerate, and through their integrity, are esteemed by their colleagues. Fairness, honesty and diligence seem to be traits.

One trait that is not linked to prosperity is giving up on a hard job, or just "getting the piano to play."

It is very important to stick with a hard job until it is done right. By sticking with it, you may temporarily earn less per hour, but you are learning something and you are improving your reputation — thereby pointing yourself toward a prosperous future.

By skimping, one might temporarily earn a little more per hour *for that day,* but he learns nothing. By skimping, he is establishing a habit that will stop his skill development at a low level. Not only will prosperity elude this person, but his work will be a strain for him.

Work will always require effort, but there's a big difference between the defensive disposition of the guy whose standards are "good enough," and the enthusiasm and love of this work that characterize the technician with high standards — the one probably takes a lot of aspirin, while the other must learn to deal gracefully with the gratitude of delighted customers. □

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THE TECHNICAL FORUM

Jack Krefting
Technical Editor

Vertical Piano Rebuilding Part 2

Continuing discussion of back stiffening; downbearing, sidebearing, plate location, beginning of pinblock replacement discussion.

Last month we discussed some of the ways in which a weak back may be stiffened by the addition of material; wood, metal or a combination of the two could be added to aid the back in resisting the bending caused by string tension. For the sake of completeness, not that we necessarily recommend such treatment, we will point out that another means of achieving stability is to apply compressive force to the back side of the back as illustrated in **Figure 1.** The precise number of rods and turnbuckles needed would depend on the point of application — that is to say, the wider the angle iron, the further back the force can be applied; because of increased leverage, progressively less force would be needed. Of course, the instrument would have to stand further away from the wall, but this is a hypothetical situation anyway.

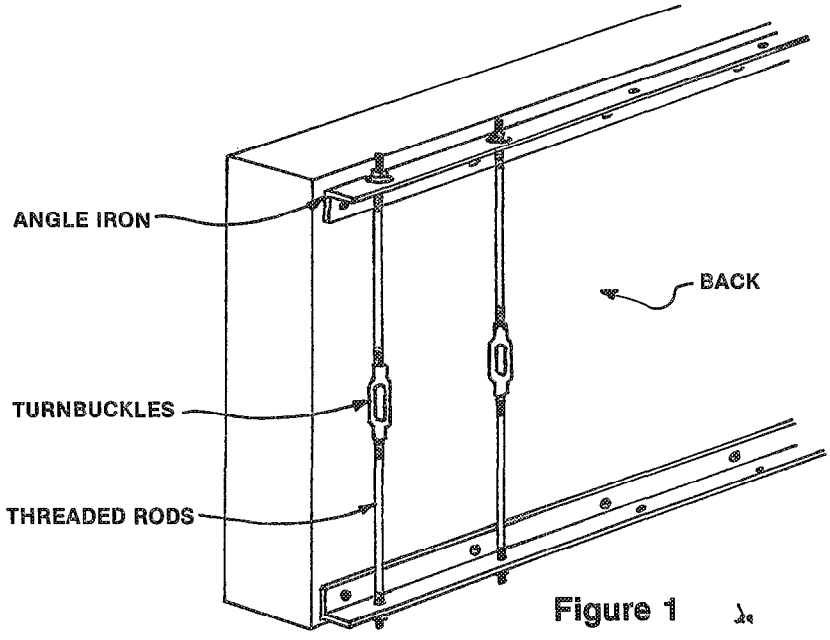


Figure 1

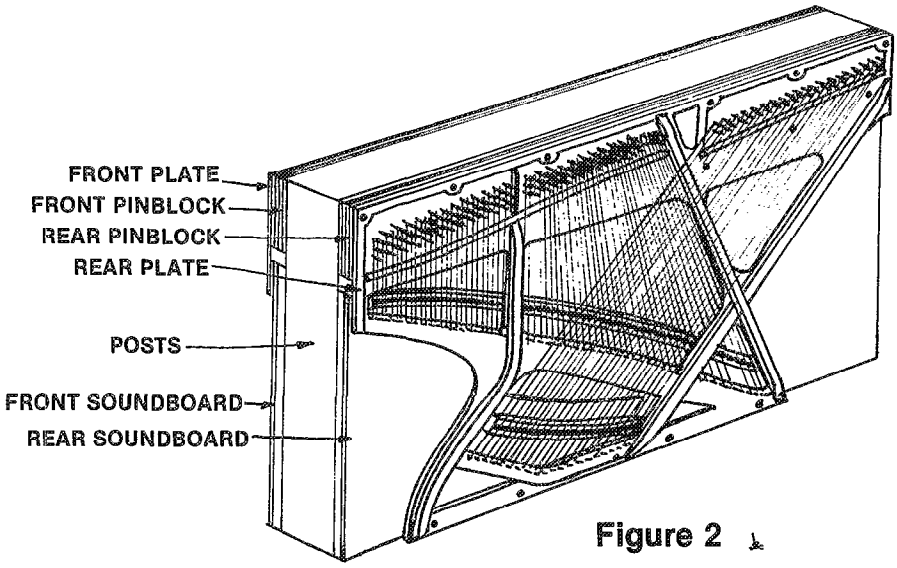
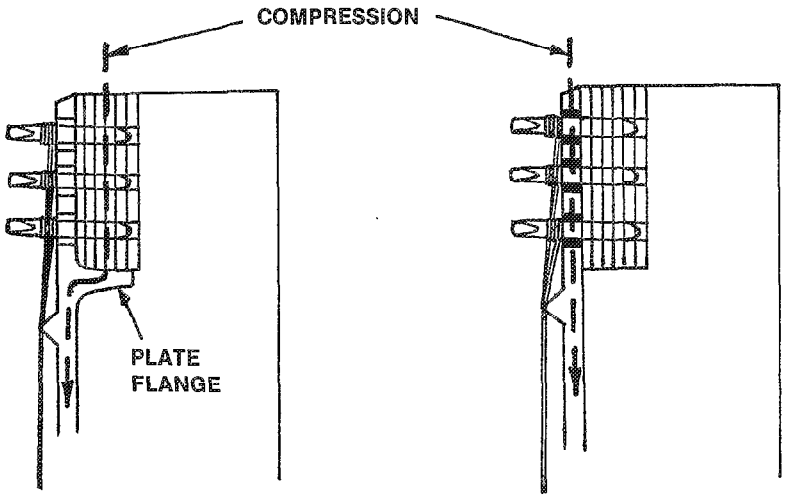


Figure 2

I recall someone writing in once with a description of a strange piano which had been built "double" in terms of the back assembly. It had one set of backposts and filler blocking, but two of everything else as shown in **Figure 2.** The back plate was cast in reverse so its treble end was at the left and could be through-bolted to the treble end of the front plate, and so on. The back plate was fully equipped with strings, bridges, soundboard and pinblock, and the piano technician was apparently supposed to pull the back strings to pitch along with the front ones. This curious feature not only equalized tension on the backposts, it also augmented the sound by allowing the back set of strings to vibrate sympathetically with those on the front side. Just how this could work without dampers on the back side is puzzling to me, but I imagine there were plenty of other problems as well. How, for example, would one tighten a loose soundboard button? We won't even discuss how much fun it would be to tune such an instrument. Fortunately for everyone, the design did not survive.

When pinblock replacement is indicated, many vertical pianos are junked or doped with "restorer" simply because it isn't economically feasible to replace the block. This seems to be changing to some extent in the United States, and of course in countries where pianos are scarce it is not uncommon to see the replacement of pinblocks in verticals, even old uprights. As the price of new pianos continues to rise, more repair alternatives become viable.

It may be noteworthy to say that some verticals are built with a plate flange like a grand (see **Figure 3**) and many others have no flange at all. Properly constructed, either design will work very well; the only reason for



A. COMPRESSION FROM BLOCK TO FLANGE AND DOWNWARD

B. COMPRESSION DIRECTLY DOWNWARD THROUGH PLATE VIA BUSHINGS

Figure 3

pointing out the distinction here is to caution that if there is no flange it is mandatory that plate bushings be used. It is possible, in some cases desirable, to add bushings to a piano that had none initially. This changes the way the compressive force is applied, and by the way requires some changes in drilling technique which we will get into later, and it also has a tendency to lessen the springing of the tuning pins. The bushings have no holding power, but they certainly do have a purpose and should not be eliminated from a piano that was initially so equipped.

Most pianos were assembled with the aid of tooling holes so that parts alignment can be controlled, and when we disassemble any instrument we should be aware of this so we can reassemble it correctly. The more time spent taking measurements, up to a point at least, the better. The best time to think about relocating the plate after a new block is installed is before the plate is ever removed. Note, for example, the presence of existing tooling holes in the top corners of the pinblock. These align the plate to the back assembly and will serve admirably to relocate the plate provided the pinblock is not removed. But the reason we are considering dismantling the instrument is to replace that block, so we will need another point of reference to relocate the plate. One suggestion would be to drill a pair of new tooling holes at the bottom, right through the plate and soundboard and well into the back assembly as shown in **Figure 4.** Now when the plate is

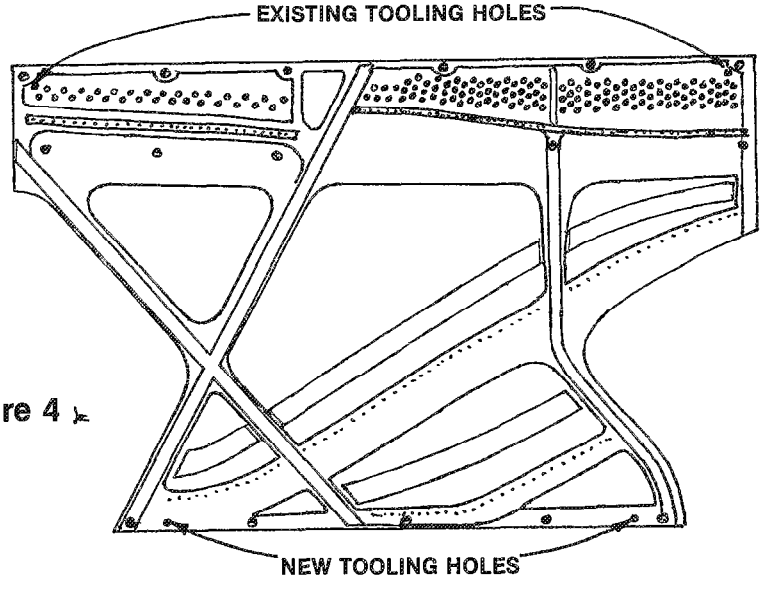


Figure 4

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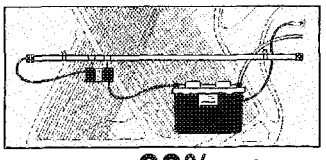

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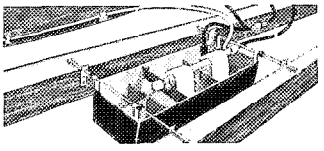

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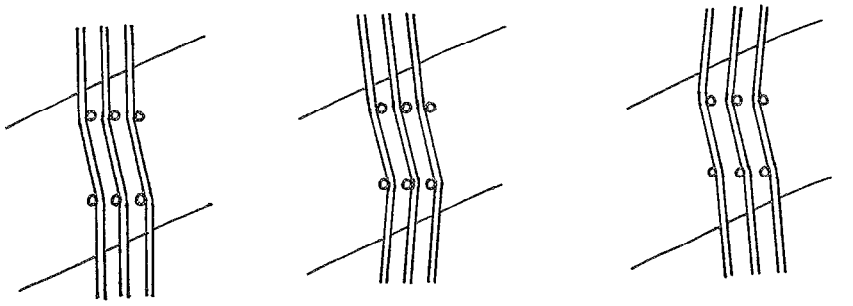


Figure 5

removed it can be accurately replaced even though the original holes disappeared with the original block.

Naturally, the assumption behind the above statement is that the plate was originally located in the right place. This might not be the case, and this could be a good time to correct the error provided we foresee the new problems we will create while correcting the old ones. Any change in the side-to-side position of the plate will require at least the relocation of the keyframe and modification of the keyblocks, as well as a complete reregulation of the dampers, for instance. And any change up or down will affect the strike point and the speaking length of the strings because the plate is moving but the bridge is not. Carried to extremes, it would be theoretically possible to raise the plate enough, if the scale were long to begin with, that treble strings could not be brought to pitch without breaking. Even if that were not happening, the strike point would then have to be raised. Depending on how the action is mounted, this might be automatic; but unless the keybed were also raised by the same amount, the action geometry would be altered.

Figure 5 illustrates the easiest way to check the side-to-side location of the plate with respect to the bridge. Of course, it is just as possible that the bridge is off to one side and that the plate cannot be moved without grinding it for side clearance, but whatever the cause, a correction would be desirable. If the plate is too far to the left, the strings may well be climbing the upper bridge pins on a hard blow, resulting in false beats, buzzing, short string time or some combination of the above. The lower bridge pins, by contrast, have so much sidebearing that the bridge capping is in danger of splitting.

The opposite situation, where the plate is too far to the right, would be somewhat better from a tone transmission standpoint because of the positive terminus of the speaking length, but there is still not enough stagger and the danger of splitting is just as real. Ideally, the string should change direction by the same amount at the lower pin as at the upper one, and if every unison on the bridge is so affected it probably means the plate was not well located. If it happens on some notes but not on others, that would indicate sloppy workmanship in the making of the bridge, or possibly an inexpert recapping job at some point subsequent to its manufacture. Bridge making and capping will be discussed in these pages in the near future, so if you have a favorite procedure to share we would be pleased to publish it. The same is true, of course, for any other aspect of piano service, whether or not we have given it recent attention.

A simple rocker gauge, readily available at supply houses, is a valuable diagnostic tool because it tells several things about the board and bridge in a matter of seconds. It will tell whether the downbearing exists, of course, when used as shown in **Figure 6,** but that's not all. When the technician quickly checks bearing every third or fourth unison throughout the scale, it becomes apparent whether that bearing is relatively uniform, whether it increases slightly in the middle, indicating crown, and whether flat spots exist. Since the soundboard is so vital to the performance of any piano, and so expensive to replace, this is the first thing I check when evaluating the condition of the instrument. We would not expect a lot of crown on an old piano in dry weather, but we certainly don't want a negative crown in any circumstances.

Because of inherent strengths and weaknesses in the way pianos are built, experience tells us that we should be looking for certain possible problems in certain areas. The soundboard tends to be vulnerable to flattening the vicinity of the bridge notch if one is present, probably because of the weakness of the bridge at that point. The high treble is most vulnerable to bridge rolling or canting because the bridge is nearly perpendicular to the pull of the strings at that point, and therefore less resistant to being pulled over, especially if it is undercut right there or if there is too much sidebearing or rust.

Use the wide center foot of the rocker gauge whenever it will fit between upper and lower pins, as this will make it easier to feel whether the rocking is above or below the bridge. If it is flat or negative above the bridge and there is considerable rock below, look for a bridge that has rolled (pulled the soundboard into a distorted S-curve) or canted (become unglued from the

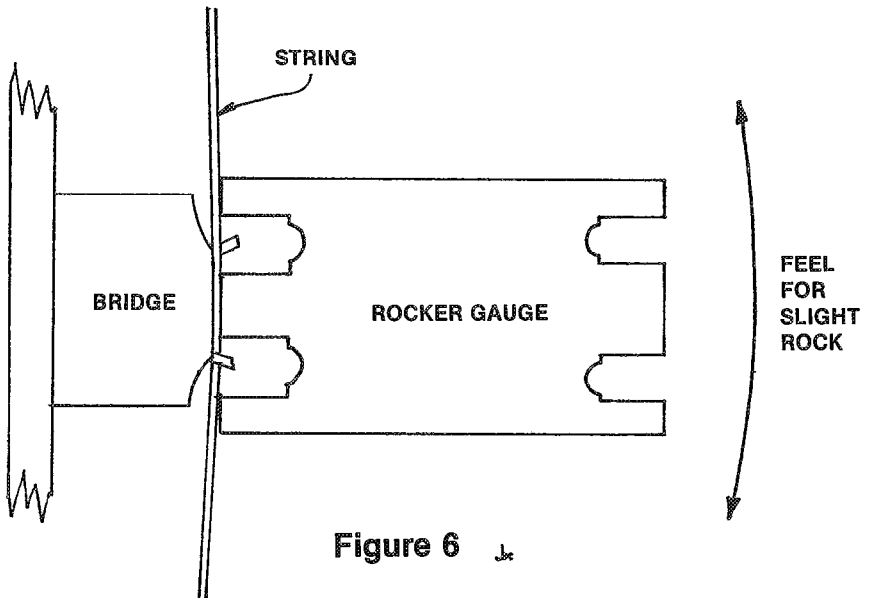


Figure 6

board and tilting toward the tuning pins). The latter situation is repairable in most cases, as we will see in coming issues, but the former usually requires a new soundboard.

Erratic Blow Distance

Q: *". . . I had an experience the other day with a vertical piano which I never had before and can't explain. I was checking it over, doing some spot regulating and so on, and while I was tuning I discovered a broken whippen flange. I pulled the action, replaced the flange, and when I reinstalled the action the bass hammers were suddenly standing off the rail, a little bit at the top of the bass but more and more. It tapered until the lowest hammer was 3/4" off the rail! I made sure that all four brackets were seated correctly, and I had not changed the lost motion or the key height or anything that would account for this radical change . . ."*

A: The error was not of your doing, but that of the person who last placed the action in the piano. The number one bracket was not seated on its support, and the piano was regulated with the action rails sprung in this manner. When you removed the action and replaced it, being sure that all brackets were seated, the previous error was uncovered. There is nothing to do in such a situation but to increase lost motion (lower the capstan or pickup finger, etc.) until the hammer shanks are resting lightly on the rest rail. It's always a good idea to check the blow distance too, but the symptom in this case seems to be clear-cut that there is a real temptation to jump to conclusions.

It might be interesting to try to discover how this could have happened. Were the support studs not in a straight line? Is the action rail warped? Is the dimple in the action bracket incorrectly located? Or was it simply a matter of someone forcing the action into position in the best tradition of Primitive Pete? A judicious use of force is sometimes indicated, but only when the technician understands precisely where and why the force is being applied, and to what end.

Individually Tied Treble Strings

Q: *"Recently I tuned a Horugel grand for the second time. All the smooth wires were tied, each one an individual string. Could you tell me if there is any particular advantage in this? Also, could you tell me anything about the Horugel piano? . . ."*

Duncan Ritchie
Tampa, Florida

A: The Horugel name is an old German one so far as I know, dating back to the nineteenth century. The name has recently reappeared on pianos manufactured in Korea. Whether the piano in question is German or Korean would depend on its age, since quite a few years elapsed after the German piano went out of production, before the Korean piano existed.

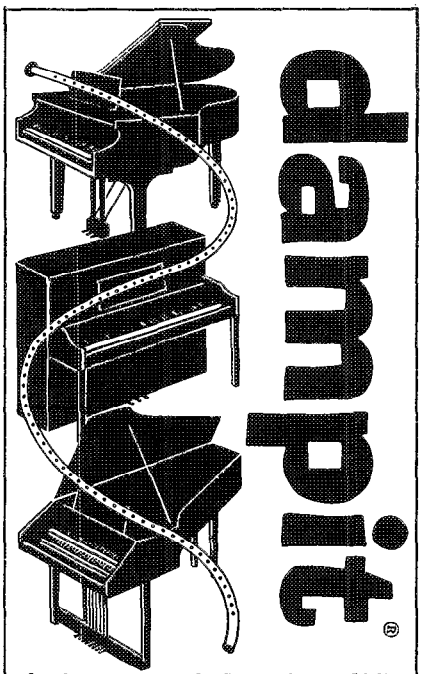
The practice of individually tying strings is common in European pianos, and there are some advantages to it — at least, two that I know about. The first advantage is that if a string breaks the pianist can still finish the performance without the double penalty of a Siamese neighbor. The second is that the departure angle from the bridge can be identical from string to string throughout the scale, something that is just not achieved regularly with the usual system of shared wire. Of course, the piano must be very carefully engineered and built to take advantage of the small benefit, which is debatable anyway, but on paper it looks better.

On the other hand, a piano strung in the conventional manner will stabilize more quickly, in my experience. No matter how the loop is made, it tends to cinch up gradually, and three or four chips are needed instead of the customary one or two.

Rebushing Flanges

Q: *". . . I have heard a lot of different ways to rebush a flange, and I have tried all of them but with limited success. I can't seem to get a clean cut on the bushing cloth for one thing, and I want to know whether to spiral the cloth as some advocate . . ."*

A: We hear a lot about theoretical ideals, some of which make a lot of sense, but as practical technicians we also know that some things work and others don't. The idea of spiraling the cloth so the seam forms a helix instead of a straight line looks great on paper but doesn't work so well in practice because it is almost impossible to cleanly cut the cloth after bushing the center.



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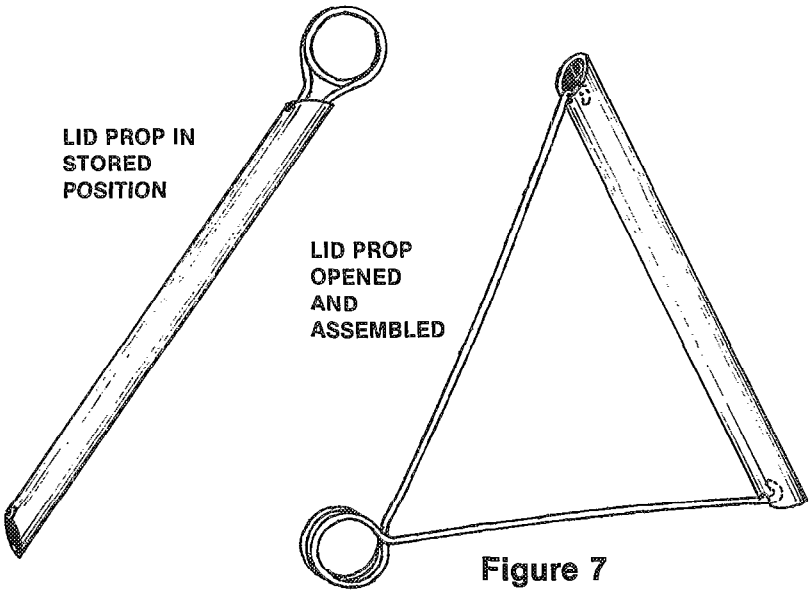

Figure 7

Tear the cloth, don't cut it, into strips wide enough that the torn edges will knit together but not overlap in the center. Pull it straight through, glue it in place and insert a centerpin to keep the cloth against the wood while the glue sets. Pull the pin out and cut the cloth with a razor blade *from the open side toward the closed side*. This prevents strings of wool from protruding from the open side (seam edge) after cutting.

Newsletter Tech Reprint

The following was taken from the April 1982 issue of the *Indy 440*, the Indianapolis Chapter newsletter edited by Ron Berry:

Measuring Wire Sizes

"I believe that every tuner should carry a micrometer in his case. This gives you a means to measure positively and accurately not only piano wire, but also tuning pins, center pins, and bass strings.

"The conversion from micrometer readings to wire sizes is simple. Just subtract five thousandths from the micrometer reading and divide by two and you will have the wire size. For instance if the micrometer reading is .037, subtracting .005 gives you .032, which divided by 2 is 16.

"There is a short cut which I discovered by accident which worked quite well. One rotation of the barrel of the micrometer corresponds to .025. So the number you read will be added to .025, since all the plain wire sizes fall between .025 and .050. The numbers you read will be between 0 and 24. If you half this reading it will give you the last digit of the wire size. In the example which measured .037, the reading on the barrel of the micrometer was 12. Half of this is six, so it is number 16 wire.

"Of course we could measure it with a metric micrometer and not convert at all. But that would be too simple."

Gadget Of The Month

Once again our inventor of Herman Koford of the South Bay Chapter in Southern California. The gadget seen in **Figure 7** is a folding lid prop which will fit into a shirt pocket, taking about as much space as a fountain pen.

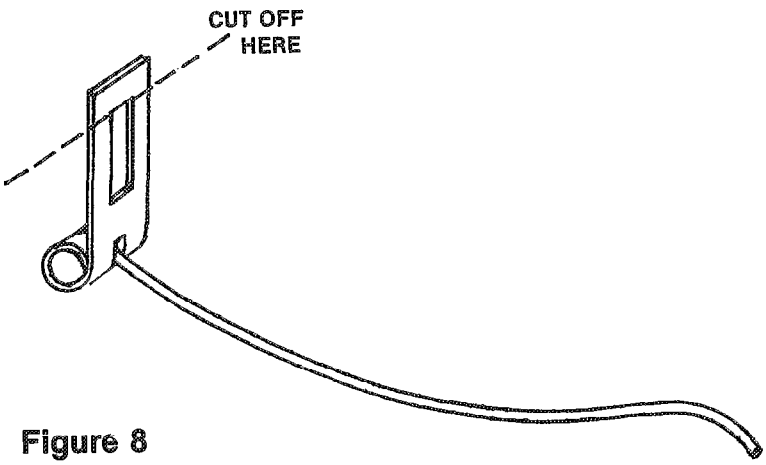

Figure 8

It is made of a piece of aluminum tubing and heavy gauge piano wire, bent as shown. Thanks, Herman.

Tip Of The Month

Gerald Foye of Lemon Grove, California, submits the following:

"Installing hammer butt repair springs is not an easy job to begin with due to space problems. It is even more frustrating trying to hold the mounting clip in place and get the screw in at the same time. Having installed a number of these I finally decided it would be less difficult by turning the screw in first. This is accomplished by snipping off the top of the clip, making it possible to start the screw. Then slide the mounting clip in place and tighten the screw (see **Figure 8**)."

Reader Comment

". . . during January this year, I tried (the) resin-in-the-hold method for repinning a 20-year old piano and the pins are extremely tight, like about 250-280 inch pounds! Real arm breakers! My only hope is that after a year or two the seasonal expansion/contraction cycles will modify the torque . . ."

Dean Thomas
Edinburg, Pennsylvania

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

Jack Krefting, Tech Editor
Piano Technicians Journal
3802 Narrows Road
Erlanger, KY 41018

THE TUNER

Paul Monroe RTT
Orange County Chapter

"A Method To Aurally Set An Accurate A."

This subject was discussed a few years ago by our good friend, the late Carl Wicksell and I feel it should be discussed again, especially for the student/apprentice.

Many technicians, including myself, believe that you can not set A4 accurately to 440HZ by listening to a tone generated by a fork or an electronic device and playing the note A4. You must make use of another note where you can utilize the use of a beat rate. You can hear the smallest of changes in beat rates which makes accuracy possible. This may sound complicated up to now but it is really simple.

First use A3 as a beginning note. Set your A440 fork in motion, place it against the underside of the keybed (or between your teeth), play F2 at the same time and establish in your mind the beat rate you hear. Play A3 and F2, tune A3 until you have the same beat rate.

You need to know nothing more than this to set an accurate A. However, there are some technicians who will wonder what is happening. When you activate the A440 fork and play F2, the 5th partial of F2 and the fundamental or 1st partial from the fork set up a beat rate. In theory the 5th partial of F2 should have a frequency of 436.3HZ and the fundamental of A4 should be 440HZ. The differential in these frequencies create a beat rate you can easily count. Therefore if you establish a beat rate with the tuning fork and F2, then tune A3 until the beat rates match you will then have set A with accuracy.

Some may be saying "but the fundamental of A3 is 220HZ" and that is true. In reality you are using the 2nd partial of A3 to establish the beat rate and if you want to double check your accuracy, depress F2 and A3 only to lift the dampers off the strings then strike A4. This will cause the 5th partial of F2 and the 2nd partial of A3 to vibrate and create the beat rate you hear.

After you have used this method a few times you can utilize it to raise pitch, remembering that in all cases of raising pitch you must raise your beginning note 25% above (sometimes called override or overshoot) in your first time through the keyboard in order to have the A4 end up on 440HZ. ie: A = 12HZ flat. Raise it to 3HZ sharp. It will be at 440HZ when you start your final tuning. Refer to my article on raising pitch for a detailed description of raising pitch.

Why should you always tune a piano to standard pitch? Better yet, why not leave all pianos tuned to standard pitch? In my opinion the only reason for not raising pitch to the standard 440 is when the piano structure will not stand the increase in tension.

In my conversations with tuners who rarely raise pitch, I believe the reason they don't is fear based on a lack of knowledge and experience. When you overcome that inhibition you will be able to raise pitch with confidence and have it last for three to six months, depending on the area you live in. When you achieve that confidence you will want to tune all pianos at standard pitch. Most of all however, for me it is a joy to know I have contributed to the proper ear training of anyone, especially children, that listen to the pianos I have tuned. I hope you will share that joy also.

The next article will take about a piano I tuned that had been fabricated from spare parts. □

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CORRECTION: In the 1982-1983 Piano Technicians Guild Directory, the telephone number of Richard C. Giroux, Secretary of the Vermont Chapter, was omitted. It is as follows: (802) 658-3059.

VACUUM LINE

Raye McCall, RTT
Pomona Valley Chapter

Universal Player Piano Company

It isn't often that any of us today have the privilege of being close enough to the development and founding of a piano company to know some of the interesting details and history of its inception.

The Universal Piano Player Company is a newcomer to the American player piano scene, and its founder and developer, Mr. Richard Carty, is a personal friend of mine. He has been kind enough to supply us with the details of the development of this new player unit. In order to avoid missing any details, I will pass on the information just as I received it.

The article, as here printed, was written by the office staff of the Universal Player Piano Company, to whom I am indebted for the information.

"Universal Player Piano Company was started during the Summer of 1977 by Richard Carty, David Saphir, Don Barr, and Al Grossman. Essentially, it continued (after a short lapse) the work of the American Player Action Company. The concept of our player mechanism had its roots in the Richard Carty organization. The Carty organization, owned by Richard Carty, has been in the player piano restoration business since 1950. As part of their regular activities, they restore reproducing pianos, Nickelodeons and orchestrions.

The Universal Player Piano Company is a newcomer to the American player piano scene.

"One of Dick Carty's associates was Luther Joy, who for several years repaired old player pianos. He became disenchanted with the primitive and complicated concepts and toyed with the idea of developing a no-nonsense player mechanism which would be easy to build with present day technology, trouble-free, no problem to service and tune. To this end, Luther Joy worked in the spool box area and eventually obtained a patent covering his work. As Luther Joy's interest in developing a new player was mounting, he interested Dick Carty in support of this development project. To this end, Dick Carty made his shop available for 'the project' and supplied both his own expertise and that of other of his personnel. 'The Project' began to elucidate interest among the personnel of the Carty organization and much was contributed by them out of pure interest in the primary goal, ie: to build the highest quality, most trouble-free player piano, and easiest serviceable mechanism ever built.

"The transmission and reserving mechanism was developed by Iver Becklund and was so unique that a patent was issued in the connection. He also contributed greatly to the basic engineering and design of the stack. Although the first spool boxes were made largely of wooden parts, it was always believed by the Carty organization that a metal spool box was truly the way to go. It would never change shape or 'come loose at the joints'. Mr. Carty's experience with old wooden stacks out of players built from the turn of the century to the 30's convinced him that if a stack could ever built out of metal, it would be the way to go inasmuch as the metal could not leak and the joints separate, as is so often the case with wood. The all-metal stack with neoprene gaskets was developed in short order.

"A great achievement, in addition to the metal stack itself, was the concept of screening the bleeds so that they could not plug up and cause a note to stick. To this end, a strainer screen which separated the tracker bar holes from the bleeds was installed. As a further measure that no bleed hole would ever plug up, the stack was designed so that the bleed hole remains accessible from the outside and can be cleaned or opened by a non-skilled person with an ordinary paper clip or wire. The stack mechanism was machined to very exacting standards by Roland Kennard, an independent machinist and player enthusiast.

"The foot pump concept was an extension of Luther Joy's initial efforts. Iver Becklund engineered the balance between the foot pump, its reserve capacities and the player stack.

The combination of all the various efforts and engineering produced a remarkable player mechanism.

"The combination of all of the various efforts and engineering produced a remarkable player mechanism. In order to demonstrate the potential worth of the mechanism, Luther Joy placed it in a standard console piano.

"With the initial engineering basically completed, Dick Carty caused a partnership to be formed under the name of American Player Action Company. The purpose of the partnership was to raise sufficient capital for the purpose of building a test-run of fifty pianos for the purpose of proving the feasibility of the system. The partners contracted with a piano manufacturer for fifty studio pianos. Dick Carty placed an independent order for eleven Nickelodeon cases. The pianos were delivered and in due course the player mechanisms were built and installed. The first players were delivered on February 28, 1977.

"Just after the fifty player pianos were completed, the Carty organization pursued the construction of the eleven Nickelodeons, which were eventually placed in commercial establishments. About one and one-half years after Universal Piano Company commenced player production, many people had seen the Carty Nickelodeon wondered if Universal would ever produce a Nickelodeon.

Continued on page 29

AFTER TOUCH

David W. Pitsch, RTT
Utah Valley Chapter

50 Point Guide To Grand Regulation Part XXII

Step #36 The Backcheck Distance continued

Last month we talked about roughing in the hammer tails and regulating the backcheck bevel. Now we'll get to the real meat of the subject and cover how to regulate the backcheck distance, along with some pitfalls to watch out for. Going back to the band regulation chart (See June *Journal*) we see that the key height and key dip directly affect the backcheck distance. An argument can be made that the escapement also affects the backchecking in that if the escapement if set so high that the hammer blocks upon the string, it interferes with the checking. That argument aside, just the key height and dip need be considered.

This seems reasonable since the backchecks are connected to the back of the keys. The keys act as a lever, and certainly changes in the height of the lever at the center, or the amount that the lever goes down at the front will change what happens at the back of the lever. The key height should at this point be correct, as it was regulated as step #12 in the 50 point checklist. However, the key dip may or may not have been regulated for the final time, depending upon the sequence used in section IV The Touch part of the checklist. The sequence used here lists the dip as step #35, the step performed just prior to the backcheck distance. So in this order, we can safely set the backcheck distance without worrying about something changing it as other steps are performed.

Keep in mind that the backcheck distance may vary slightly if the key dip is altered, so if the dip is regulated after the backchecks, some touching up of the checking distance may be needed. This only takes a few minutes, and really is not that hard to do. As was mentioned before, use your fingers when bending the backcheck wires, to insure that the wires bend at the bottom, keeping the bevel the same.

Again looking at the grand regulation chart we see that the backchecks affect only one other step, that being the repetition spring strength. This is sort of stretching the facts if we say that the backcheck distance actually affect the repetition springs. What happens, is that it affects the test that techniques use to determine the repetition spring strength. If the backchecks are altered to check a little closer to the strings, when the hammer is put into check and then released, the repetition springs will seem a little less strong. Without changing the spring strength, if we then alter the backchecks so that they check farther from the strings, it will appear as we watch the hammer rise from check that the repetition springs have been strengthened.

This is caused by the amount that the repetition lever has been compressed. This phenomenon does not normally interfere with action regulating as the repetition springs are *always* regulated after the backcheck distance. But it can be important during the diagnostic, price estimating stage of the game. To an unaware technician, the first time he looks at an action he may find that the repetition springs are either too weak or perhaps too strong. He may prematurely judge the action as needing the repetition springs adjusted, when in fact something else may be causing the problem. Perhaps the backchecks are way out of regulation. Even more likely is the chance that the action centers are too tight or too loose. On Steinway style actions the repetition springs groove may be dirty and clogged.

To help prevent this, keep in mind the following rule of thumb. A good ballpark measurement for correct backchecking distance is to have a hammer in check to be about 2/3 the blow distance above the hammers at rest. Theoretically speaking, the ideal is to have the hammers check as close as is possible to the strings. This will of course give the fastest repetition. But under no circumstances, especially during a hard blow to the key, must the backchecks interfere with the hammer tails as the hammer rises to the strings. To get both good checking without interference will almost always result in hammers checking 2/3 the blow distance above the hammers at rest. Now this can be eyeballed with pretty good accuracy with a little experience. Just watch the coloring on the shoulders of the hammers as compared to the tips of the hammers at rest.

The manner in which I like to regulate the backcheck distance is to pull the action out and place it on a level surface. Remember that I usually regulate at the piano, so the workshop bench will not be available. If the customer allows, I cover the lid of the piano with a moving pad and place the action on top of the piano. Otherwise I may use a nearby counter top, or if nothing else, I just place the action in my lap while seated at the piano. Taking keys that are a perfect fourth distance from each other, I set these as samples doing one section of the

Continued on page 29

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Susan Graham, RTT
San Francisco Chapter

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(Thomas "Fats" Waller)

Although that remark wasn't originally addressed to a piano, many of us have thought similar things when confronted with recalcitrant grand trapwork. The trapwork system depends on the proper condition and regulation of all its parts; even slight wear can lead to serious problems. It is a system subject to stress; pedal usage contributes to the lyre being literally kicked apart. It just hangs there . . . exposed. It's susceptible to damage or misinstallation when the piano is moved and is vulnerable to the attention of kids, dogs, and the home fix-it. It doesn't help that as tuners, we sometimes get into a habit of not checking the trapwork until the tuning is completed. Then we crawl underneath with a jar of lube hoping to cure a groan and get out of the house.

A newer pedal system frequently can be fixed with minor lubrication, adjustment and tightening; these should be checked as part of every tuning. However, there comes a time when the lyre should be removed for complete disassembly and rebuilding. The whole system should then be checked for tightness of glue joints, screws, etc., and all parts subject to wear should be replaced, lubricated and readjusted. Some of it may seem like extra work but only a complete job will bring the entire system back to top condition. A thorough job actually saves effort compared to the frustration of hunting down a squeak form brace to pitman to guide hole and back. To disassemble a system, analyzing and rebuilding it is the best way to understand how it should work. There are many variations in trapwork design; completely rebuilding a few gives a basic understanding which will help in troubleshooting as well as working on unfamiliar or unusual trapworks.

For purposes of discussion let's consider a standard grand trapwork design; a box containing 3 pedals, suspended by two posts from a top block which fastens to the keybed. Braces extend from the keybed to the posts or box; rods extend from the pedal heels to levers underneath the keybed, and pitmans go through the keybed to the damper tray, etc. What this article hopes to do is outline general guidelines and tips for getting all this to work together, quietly, reliably, and efficiently.

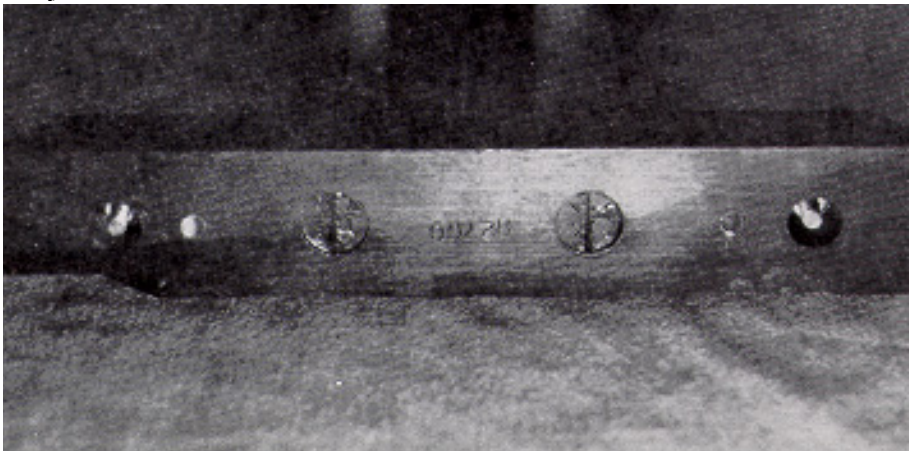
The first step is to play the piano and check each pedal for obvious problems. Check that the legs of the piano are solid and *then* get under the piano with a good light to continue checking the lyre. If it is intact, attempt to wiggle it back and forth. There should be no play. If there is, then the braces and/or the fasteners of the top block are loose, or the lyre is coming apart. Remove the lyre, noting how it is fastened to the keybed: large screws or bolts, or a sliding male-female plate arrangement similar to a leg plate. If the braces are very loose or missing, chances are that these fasteners have worked loose or broken and further work will be necessary to insure solid re-fastening.

If the lyre is in pieces under the piano, assemble them while you are there to be sure of having all the pieces and not inadvertently reversing any. Also check the condition of the levers and other parts such as springs and pitmans under the keybed which may need to be repaired or replaced.

Lyres come apart at the glue joints between the posts and the top block, or between the posts and the pedal box. The posts usually end rounded into a dowel which is glued into the top block or pedal box and wedged: much as an ax handle is wedged for tightness **(fig. 1).** These glue joints must be solid; no amount of bracing will help if the lyre is separating with every pedal stroke. Once these joints are loose they must be completely taken apart and reglued. Remove any screws which help hold them together and use a rubber mallet to separate the pieces. Either apply acetic acid to soften the hide glue and make it Titebond compatible, or sand the pieces clean. If the parts were loose enough to fall apart easily, they should be re-wedged. Make a wedge-cut in the post with a backsaw, being sure that it runs front-to-back (parallel to the pedals) not side-to-side, which will split the post. Apply glue to both pieces, reassemble and clamp if possible. Drive in a hardwood wedge and

...we crawl underneath with a jar of lube hoping to cure a groan and get out of the house.

Figure 1



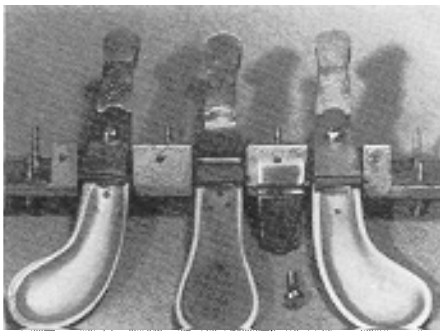


Figure 2

trim it flush. Looseness around the posts is one source for a persistent creak, so check these joints carefully.

When the lyre is on the bench, disassemble the pedal box. Access to the pedals is gained by unscrewing the bottom of the pedal box. The most familiar exception is Steinway: a metal plate at the front of the box unscrews and (rods removed) the whole internal assembly slides forward and out. (This can be done with the lyre still attached, if necessary, for quick servicing.)

However, the box disassembles, the three pedals usually can be pulled out as a unit. The pedals have pins which are fixed in them and rotate in wooden blocks, dowels, or between screwed-together plates. Again, Steinways are slightly different: the pins are stationary in the assembly and the screw-on plates are on the pedals themselves. When disassembling any system, be careful not to mix up *any* of the parts: screws should go back in the same holes, and the dowels or blocks or plates must be kept in order.

There are several different types of cloth, felt and leather in a pedal system, each with a particular function. In systems such as Steinway's where metal bears against metal around the pin, there is lubricated bushing cloth (or teflon sleeves) **(fig. 2)**. These cloth bushings should always be replaced, using bushing cloth which resists wear better than plain felt. A heavy lubricant is used here — sometimes grease graphite but there are better, cleaner lubes and there is no reason to use graphite. I use VJ lube, a compound developed by Vic Jackson from southern California. It is available from some suppliers or can be made if you can obtain anhydrous lanolin. Melt equal parts of lanolin and petroleum jelly (carefully, in a double boiler — low flash point) and work in as much pure talcum powder as it will take. This yields an effective, whitish lubricant. It is rather stiff and so only

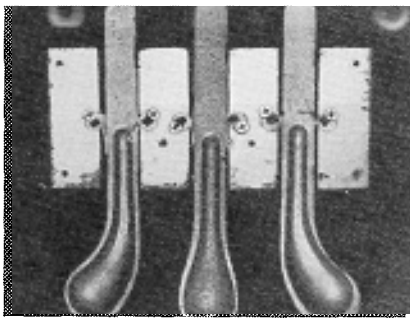


Figure 4

should be used where parts are spring or weight assisted.

Lubrication is applied to the bushing cloth where it wraps around the pin and to the leather or felt punchings which space the pedals between their supports. Leather resists wear longest; a punch can be bought to make leather punchings. Many makers use bushing cloth or keybed punchings — whatever is used should fit snugly but not bind. These punchings are lubricated on both surfaces. Pins which go into holes in wood are also twice-lubricated with VJ lube: lubricated and inserted and removed, re-lubricated and re-inserted.

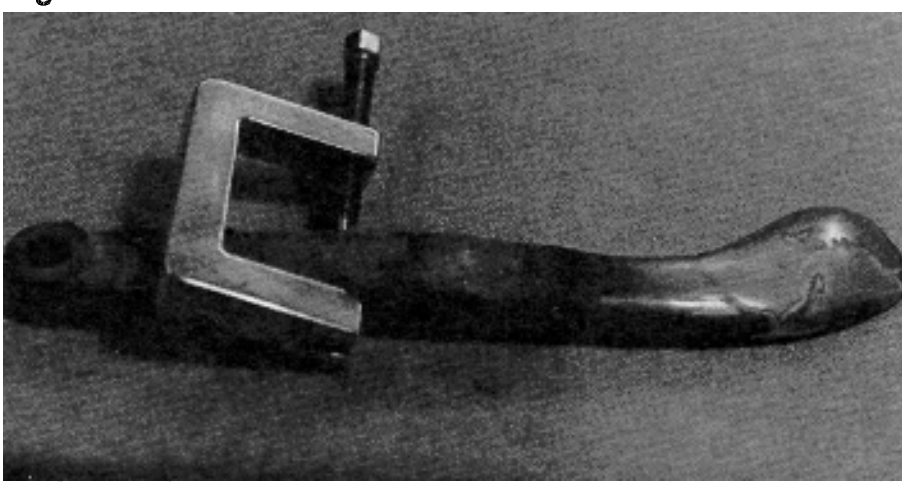
The pin must be held firmly. If there are plates, the screws must be tight and the plates fit snugly. If the pins go into wood, be sure the holes are not elongated or the blocks cracked. Hairline fractures can be discovered by inserting the tip of an awl and gently attempting to pry the hole apart. These cracks must be repaired or the part replaced. Any looseness around the pin will cause trouble; the system is designed to work with the pin held tightly in place, only free to rotate.

Pedal pins do break or bend — use the pedal pin pusher to remove the pieces and replace with a new pin, which should be tight enough to be driven rather than pushed in **(fig. 3)**. If the front of the pedal is worn thin, replace the pedal instead.

When these details are completed, the unit goes back in the box. It is critical that the blocks or dowels are held tightly in place; be sure all screws are tight. The dowel-type assemblies usually have small pieces of felt to take up space and prevent noise between the bottom of the dowel and the bottom of the box **(fig. 4)**. Pieces of string lining the hole for the dowel aid in removal and should be reinstalled. Often the bottom board of the box is a critical support and must be solid.

Pedals must be level for appearance and ease of play. This is accomplished by placing blocks on firm felt (hammer skivings) under the back of the pedals (in the pedal slots). These blocks must be all the same thickness, and are not altered in later regulation. The firmer the felt the better, as it will hold the level longer. Steinway pianos have leather-covered front rail punchings

Figure 3



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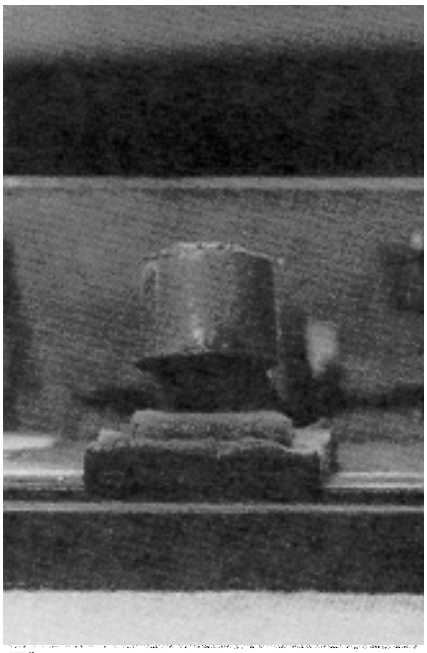

Figure 5

here **(fig. 5)**. These are easy to make (they can also be purchased). Drill 3 1" diameter holes about 1/4" deep in a piece of wood. You need 7/8" diameter thick front rail punchings, thin buckskin, and heavier leather about 1/8" thick. Lay a piece of buckskin (about 2" square) across the hole and push the punching down into it. Apply glue only to the buckskin surface still above the hole — not to the punching or the buckskin it contacts. Lay another piece of thin buckskin across the top, then apply glue to its entire exposed surface. Place the heaver leather on that, put a board across the top and clamp. When the glue dries they can be trimmed to size and tacked in place with a small tack in each corner. There is a recess under the slot into which the heavier base leather fits, so match that dimension if there is no original to duplicate.

However this adjustment is made, remember that it is uniformity and wear-resistance which are important. These blocks are never lubricated. Calculation can tell you how thick to make them insure adequate pedal travel but once they are set they are not individually changed to take up lost motion, etc. There is firm felt elsewhere to limit pedal travel, but we'll get to that later.

The rest of the felt in the pedal box is usually soft: its purpose is noise-reduction and decoration. There is felt or bushing cloth lining the slots, and thicker pads of soft felt above and below the pedals in the front (and back, depending on the location of the stop-blocks), this absorbs impact and reduces noise. Replacement felts should match the originals in size and be glued in place so they will stay.

Firm stop-blocks for the right and middle pedals are somewhere in the trapwork — the best design seems to have them on the levers where they block against the keybed. Once the pedal system is regulated these are placed to stop the motion at the appropriate point (this is not the job of the upstop rail). In some pianos the blocks are in the box in the back slot above the pedals, these too are adjusted after the system is regulated. The stop for the shift is a screw in the cheekblock area which limits the keyframe movement.

At the back of each pedal there is usually a socket for the rod. This is bushed with leather, rubber or neoprene on both bottom and side surfaces. Neoprene resists wear longest, tubing to make these sleeves can be found at auto supply stores and used in conjunction with a leather punching at the bottom of the hole. Cup-shaped bushings are available from suppliers and manufacturers — keep an assortment on hand. Whatever is used should completely take up the slack around the rod and should be uniform for each pedal — adjustments in the rod are made elsewhere. The bushing may need to be tack-glued to the pedal to keep it from creeping up the rod, it should also be lubricated to prevent noise. VJ lube is good unless the bushing is rubber (which deteriorates in contact with petroleum jelly) in which case pure lanolin or a similar non-graphite material can be used. Some rods have small pins which go into the back of the pedal — these smaller holes are bushed with cloth which is split and extended across the top of the pedal where the wide part of the rod rests. Yet another system has the rods pinned to the pedal as if a center pin arrangement. These are very mover-proof, but a nuisance if the rod must be removed as the pin must be driven out.

The rods should be clean and straight, clean them with Brasso to avoid scratching the plating. If they go through bushed holes in a guide rail, replace the bushings so the rod just slides through — no lubrication should be needed here, unless it is a little dry spray lube on the rod.

If earlier inspection showed that the lyre-to-keybed fasteners were too worn, repairs must be made. If either half of a sliding plate is broken, both halves must be replaced as a unit. If the lyre was screwed or bolted and the holes in the keybed are enlarged, I install T-nuts and bolts. Find the largest T-nuts you can (usually 1/2") and bolts to fit. The bolt length must be such that it reaches through the top block and keybed and into the threads of the nut but it most not protrude into the action. After the stripped hole is drilled to accommodate the tube of the T-nut (action removed) use a chisel and a round punch to make a shallow recess for the head of the T-nut. Tightening the bolt pulls the head into the wood nearly flush but since the action must slide be sure there won't be interference. The nut is driven into the hole from inside the keybed and the bolt threads in from below. If the bolts don't have slotted heads, cut slots in them with a hacksaw for the sake of movers and technicians who may have only a

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Braces go into holes in the posts or box. Insert flat-head screws in these holes if there are none already. This gives an easy, permanent method for adjusting the brace tightness. Once adjusted, the screws should be covered with thin felt. There should be no end play in the braces but they must not force the lyre forward. It may require a few attempts to get this right but it is critical that the lyre is fastened tightly and the braces support it in its position.

The tops of the pedal rods contact the levers; the levers rest directly on the rod with a leather pad in between. Replace these leathers rather than sandwich a new piece over a worn one. Lubrication is usually not required here. The levers rotate on pins which are held by blocks fastened to the bottom of the keybed **(fig. 6)**. These blocks must be tight; the pins must be straight and clean (replace them if bent) and should be twice-lubed. There are punchings to space the levers in the blocks which should also be replaced and lubricated. Often there is a set screw in the lever which locks onto the pin — the pin should rotate only in the supporting blocks. There may also be a spring, either leaf or coil, between the lever and the keybed, with leather at the contact points. Replace these leathers if worn and lubricate them well (VJ), be sure screws fastening springs are tight. On most pianos there are stops to hold the levers in place if the lyre is removed: L shaped pins, long screws, or another block of wood. Replace these if broken — they are critical when the piano is moved. (Problems in this area can often be reached for quick servicing by removing the rod and the stop to let the lever fall down enough to give access to the spring and pitman.)

The shift pedal rod directly contacts the shift lever which contacts the keyframe. The right and middle rods contact the levers which in turn contact pitmans which go through the keybed to the mechanism they operate. Pitmans are notorious noise makers. The damper pedal pitman is usually a wood, metal or Teflon dowel which sits on a leather pad on the lever, **(fig. 6)** goes through a bushed hole in the keybed, and contacts another leather on the damper tray. The hole must be correctly bushed but is not lubricated — any lubrication here must be dry and goes on the pitman (although I have heard of bushing the hole with sheet Teflon). If it is a wooden dowel, I coat it with DAG 150 (liquid graphite) and let it dry completely before reinstallation. If it is metal, I clean it with Brasso and spray with Slipspray or McLube. The Teflon ones need only to be clean. The leathers the pitman contacts must be firmly glued in place, especially the one under the damper tray. This is often where the groan is, so lubricate the *ends* of the pitman and the leather with VJ. Sometimes the groan remains; the differing action of the rotating damper tray and the straight-up rising pitman creates sliding between the two. As a last resort, a small sharp pin such as a center pin can be placed in the end of the pitman so it will slightly stick into the damper tray leather and prevent this slippage.

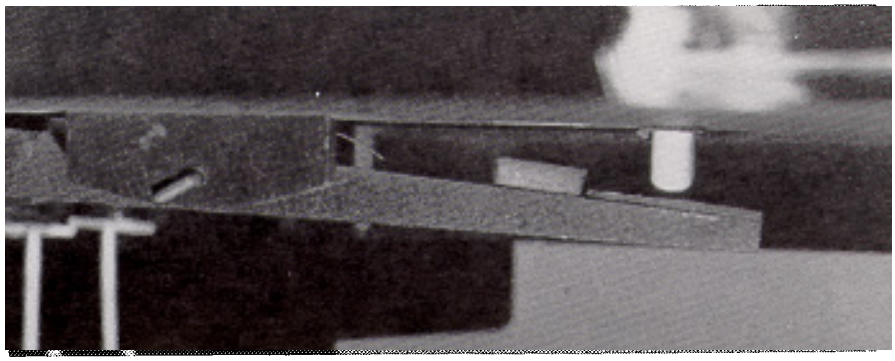

Figure 6

Other systems have a pitman pinned in a slot in the lever, and into the damper tray. (These pins may be cotter-pinned to keep them in place.) The pins should be twice-lubricated and spacing punchings replaced.

The slight lost motion in the right pedal is between the damper tray and the underlevers. Everything else, from rod to lever to pitman to tray, should be in direct contact. Adjustments are made in the rod length or the thickness of the leather. When the dampers are regulated to the keys, to the keys, the pedal is regulated to lift them the same distance; the stop-block is placed either on the lever **(fig. 6)** to block against the keybed (or a bolt) or in the box above the pedal to prevent further lift.

Sostenuto systems vary, but again there will be a pitman fastened to a U-shaped extension of the blade. Often this pitman is also screwed to the lever; there will be cloth where the parts contact. These areas should not need lubrication, nor should the blade where it rotates in its hangers (but replace all the bushing cloth). There is a spring somewhere which should be lubricated but the rest of the system works by alignment and regulation. Once the sostenuto is adjusted, stopping felt is installed at the lever or pedal to prevent further blade travel. There is no lost motion in this pedal. There is also none in the shift, which is adjusted by rod length to just contact the keyframe at rest. It is stopped when the keyframe contacts its stop screw in the keyblock or case.

Servicing a lyre is a matter of doing a thorough job with correct materials. Once serious trouble begins, you might as well fix everything with a few trips under the piano as possible. Your back will thank you and your customers will be most pleased to have everything completely restored to working condition. □

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SOUND BACKGROUND

Jack Greenfield, RTT
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Western European Music In Early Middle Ages

After centuries of disorganization and lack of direction, progress of music was renewed in the ninth century when the church of Rome established central control and uniform practice in ecclesiastical music. Many widely different earlier liturgical styles were eliminated and development now proceeded more rapidly. The acceptance of the organ for church music was an important element in musical advance. The earliest definitely known use of the organ for ecclesiastical music was in the ninth century.

The study of music theory in monasteries now began to spread rapidly with Boethius' *De Institutione Musica* as the most influential authority on music. Boethius discussed tuning principles of Aristoxenus and Ptolemy but gave full mathematical details only on the system of Pythagoras. This work set the pattern for medieval musical education and performance. The mathematics of interval and monochord division received much attention.

The medieval modal scale system had some elements of Greek theory but in general was much simpler. There was only one standard intonation — Pythagorian tuning with pure fourths and fifths. Through misunderstanding, the modal interval patterns formed by the different octave scales beginning on each note of the diatonic scale were given names differing from those used by the Greeks.

During the 1000-1100 general economic revival in Europe, the rise of cities to importance as population centers provided the stimulus for establishment of universities where the scholastic philosophy awakened an interest in culture for its own sake, apart from religious aims. The scholars now searched for ancient Greek and Arabic writings to be translated and studied.

The Roman knowledge of organ building disappeared with the Roman Empire. The first organs in western churches were instruments obtained from Byzantium. There, although never accepted for religious use, organs had flourished as prestigious secular instruments. After reintroduction in Western Europe and for several centuries later, organ building became a highly technical art limited to a few monasteries; monastic churches were the only ones to contain organs.

Early Western European Organs

Documents written during the eleventh and early twelth centuries provide details on the typical contemporary Western European organs. The instruments known as *positive* organs, in use from the tenth to seventeenth centuries, were relatively small but not portable. The wind chest, about 2 1/2 feet wide, made of wood or copper, was supplied by several bellows, probably very noisy. The pipes were equal in diameter and made of copper. There were several rows sounding fundamentals and octaves. The largest pipe was about four feet high. The keys were sliding wooden slats pushed in and returned by hand. Spacing of the keys was the same as the pipes. The keys were identified with lettering of the diatonic scale and covered a range beginning with C to C two octaves higher.

The positive organ could not be played by a single person. In addition to the player at the keyboard, another person was needed to operate the bellows. A still smaller instrument, the *portative* organ introduced in the twelth century was carried by a strap around the neck of the player who operated the bellows with his left hand while his right hand was on the keyboard. Larger organs were rare until later.

The typical early twelfth century positive organ was not far ahead in design of the Roman instrument of about 1000 years earlier. Now, however, the organ took a position of central importance in the music world and it began to receive more attention. A new branch of musical study arose, devoted to theory of operation as well as practical design of the organ.

The progress of the instrument can be traced in at least 150 treatises written from the tenth century on. Several later books are considered especially valuable references on medieval instruments. The writers and books were:

Sebastian Virdung — A German priest, author of 1511 book containing information on keyboard instruments, including ear woodcuts of keyboards with black and white keys.

Arnold Schlick — A leading early Renaissance composer and court organist of Heidelburg; author of 1511 book on organ construction.

Martin (Sore) Agricola — A cantor at Magdeburg, author of a 1528 method for playing organs and other instruments.

Michael (Schulz) Praetorius — *Kapellmeister* for the Duke of Brunswick, author of the 1618 *Syntagma musicum*, a three volume work covering theory, instruments, and practice.

Development Of Organ Design

The basic organ pipe, used since the invention of the instrument, is the open-end cylindrical *flue* pipe. The pipes sit on a wind chest. Air from the wind chest enters into the short lower conical section or *foot* of the pipe when a valve or *pallet* linked to one of the keys on the keyboard is opened. The air flows through the *flue* — a slit between the *lanquid* — a cross barrier separating the foot from the speaking length, and the lower edge of the *mouth*, a horizontal opening just above the level of the languid. The stream of air from the flue strikes the upper lip of the mouth. Tone is produced on the same principles — classified acoustically as *air-reed* action, as in the flute and the recorder. When air from a narrow slit is directed

toward a sharp edge attached to a pipe, the flow oscillates on either side of the edge generating air pulsations in the pipe and causing it to "speak". The wave length of the fundamental pitch of an open end flue pipe is a little greater than twice the length of the pipe, the pitch frequency equals the speed of sound in the pipe/wave length.

Early theorists believed pipe lengths could be determined by monochord ratios but organ builders found actual pitch to be lower than calculated on this basis and used figures determined by trail-and-error. We now know that the discrepancies are due to physical conditions at the ends of the pipes which cause a lengthening of the sound waves and *end correction* figures have been established for typical pipes. For example, for an open end cylindrical pipe, in calculations, the approximate *effective* pipe length is actual pipe length plus 1 2/3 diameters. For higher partials, the end corrections are proportionately less.

The discrepancy between actual frequency and uncorrected *natural* frequency calculated on pipe length can be considered a type of in harmonicity, however this term is not generally used in reference to organ pipes. The end correction has a significant relationship to the tone quality of the pipe. In long pipes of small diameter with relatively small end corrections the natural frequencies of the pipe serve to reinforce all of the partials of the tone. However, as length/diameter ratio is reduced, requiring relatively large corrections, the reinforcement of upper partials drops and pipes with large diameter scaling will produce tones containing only the first few partials.

Before the twelfth century, organ pipes were graduated in length but uniform in diameter; consequently the tone quality varied from full response of the longer pipes to the tones lacking in upper partials of the shorter pipes. Later organ pipes were scaled at a constant length/diameter ratio for a particular set with a value selected to give the tone quality desired.

Closed flue-organ pipes, introduced in about the thirteenth century, have a different tone quality resulting from strong odd partials but very weak even partials. The fundamental of a closed pipe is pitched an octave below the fundamental of a comparable open pipe. Several centuries later pipes known as reed pipes were introduced. These produce sound on the same principles as used in the saxaphone — by means of an air-actuated *beating* reed coupled to a pipe, usually conical in shape. The pulsations in the air stream caused by the vibrating reed give rise to a strong tone in which all of the lower partials are comparable in amplitude to the fundamental. The usual proportion of reed pipes in an organ is 20% but, beginning in the fifteenth century and for several centuries later, a type of small organ designated as *regal* contained none but short reed pipes. The *free* reed organ of the nineteenth century functioned differently using reeds to produce tone in the same manner as in accordions or harmonicas.

Until about 1400 each key sounded simultaneously a fixed mixture of a few to as many as ten pipes including unisons, octaves and other upper harmonics. Later advances making it possible to expand the numbers of rows and to play pipes from any single row or combination of rows include:

1. Register, stop and coupling mechanism for selecting rows of pipes from which tones can be played.
2. Mechanical or tracker action mechanism, allowing greater flexibility in location of the pipes and other components.
3. Use of two or more manual keyboards and a pedal keyboard.

In the development of the keyboard, during the thirteenth century slider keys were replaced by narrower lever keys which opened the pallets allowing air into the pipes. The first chromatic note added to the two-octave diatonic keyboard was B-flat, sometimes in the same row as the diatonic notes. By the fourteenth century the development of polyphony and widening compass in composition had caused expansion to the fully chromatic double-row keyboard with a range of at least three octaves. By the fifteenth century large church organs were being built with larger keyboards and many of the other elements of modern instruments.

Organ Tuning And Tone Quality

The complexity of the organ created the need for a new type of technician — a professional skilled in tuning, voicing and in providing other attention the instrument needed after it was built. Although fairly accurate calculations for pipe length sizing in building were developed, fine tuning was required at installation and periodically afterward. Flue pipes are tuned by adjusting the pipe speaking length. Devices used include sliding end sleeves and tuning slots with sliding covers parallel to the length near the end. Closed pipes can be tuned by moving an adjustable stopper. Reed pipes are tuned by adjustment of a tuning wire spring which presses against the reed and is shifted in tuning to change the vibrating length of the reed. The reed tone has a dominating influence on the pitch and no changes are necessary in the pipe itself for tuning.

Variations in temperature can cause organ tuning problems because of differences between flue pipes and reed pipes. In flue pipes, pitch is relative to the speed of sound in air which is altered appreciably by temperature differential. A rise of 30° F. will raise pitch by half a semitone. The change in all flue pipes is about the same. However, since the reeds are practically unaffected by temperature fluctuations, they sound out-of-tune to the flue pipes. For this reason and other design features causing tuning instability reed pipes have had a traditional reputation of being difficult to keep in tune.

Organ tone is infinitely variable. The organ builder broadly fixes the type of tone that a pipe will produce by such design features as: scaling — the length/diameter ratio; shape — straight, cylindrical, conical, tapered section, etc; control of air pressure entering pipe and the position and design of the mouth. Tonal adjustments after installation are made by voicing, a procedure that involves alterations in the mouth, flue, languid and foothole. The influence of pipe materials has been debated for many years. Traditionally, tin has been considered to give the best tone quality. Tin-lead alloys are used to reduce cost. Some recent research studies have concluded that pipe material is not a factor and that an organ pipe of wrapping paper could be made to sound as good as one made of tin, a conclusion many are not willing to accept.

The characteristics of organ tone and tuning were significantly influential in bringing about the introduction of tempered tuning. After musical composition began to make greater use of thirds and sixths, the sound of these intervals in Pythagorian tuning was considered harsh, especially in sustained organ tones. Historians believe organ tuners began to temper their tuning for smoother intervals before any theorist was bold enough to seriously propose departure from the established Pythagorian intonation. □

VON DER WERKSTATT

Priscilla and Joel Rappaport, RTTs
Austin Chapter

The Bridge And Its Functions

In evaluating used and new pianos, the bridge receives very little attention. It is usually assumed that it is OK when no cracks are present or if all the glue joints are in good shape. It is also taken for granted that, since the factory did it, it must be right, or if a loose bridge to apron glue joint has already been repaired, it is in good condition.

As professionals in the piano technical field, we should take a much closer look at these situations. If problems such as buzzy bass strings are present, we should be in the position to quickly identify the cause and do something about it. Answers to the customer such as "Oh, this buzz occurs because you hit the low G too hard," or "The buzz will disappear when the weather changes", are not good enough. They do nothing to address the problem and are ways of saying "I don't know what causes it and I don't want to bother with it." Reference is made here to an instrument where the bass string winding was touching the notching on the bass bridge. The bass string was fine, but the wood was not notched deep enough on the bridge. The solution was to loosen the strings on the unison, pull out the bridge pins and renotch the portion of the bridge where the contact occurred.

Bridges in piano construction serve three main functions:

1. sets speaking length of the strings
2. transmits energy from the strings to the soundboard
3. holds strings in place and determines the spacing in unisons.

The speaking length of a string is the vibrating portion of the string determined by the agraffes or V-bar at one end and by the bridge and bridge pins at the other. These ends of the speaking length of the strings or the terminating points, should be secure and definite. If they are not secure, then the strings may buzz, rattle or have wild and wierd sounds to them. We call this "false beats". One or a combination of the following conditions may contribute to unclean sounds: Poorly shaped V-bar in the treble, loose bridge pins, cracks around the bridge pins, poor bridge notching, flaws in plain wire, loose copper windings in bass strings, foreign matter around bridge pins where strings contact pins, or bridge touching plate. In all of the above conditions, we are dealing with the bridge and the strings. We are assuming that the soundboard is good and that no foreign objects are loose and buzzing on the soundboard.

Plate is being fitted to rim. In this picture, the hardwood ledge for the plate to rest on is being planed down. Plate must not rock, but fit evenly on all contact points. (Courtesy Euterpe Pianofortefabrik, Langlau, West Germany)

Checking the height of the bridge in treble section in relation to the V-Bar and the ledge of plate near hitch-pin. The top of the bridge will be planed down so that the bearing will be correct. Notice also that the top of the bridge is not flat, but slanted slightly to the hitch-pin side. This is to allow for the pulling forward of the bridge by the strings when the piano is strung and brought up to pitch. (Courtesy: Euterpe Pianofortefabrik, Langlau, West Germany)

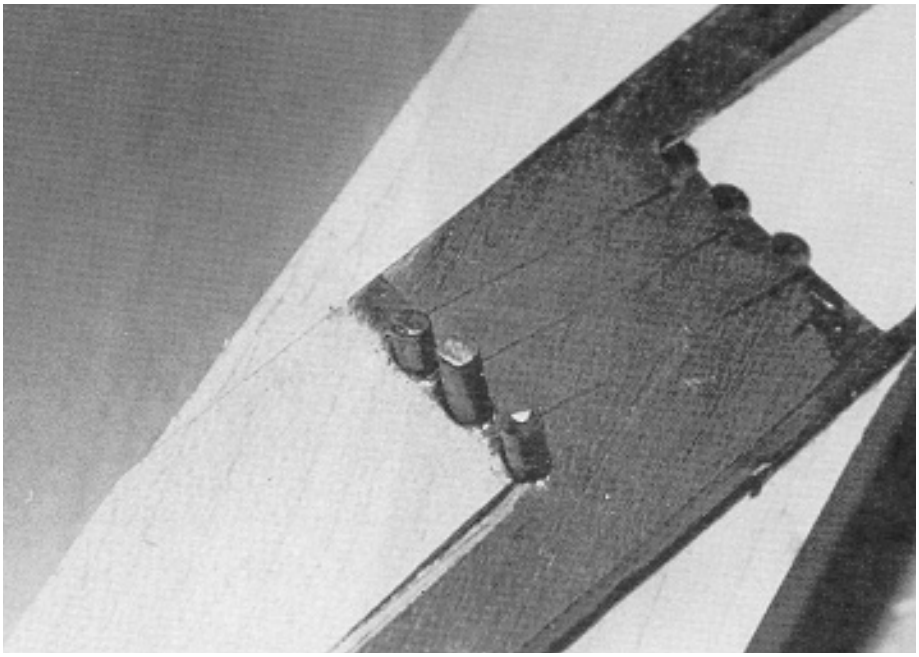
The bridge serves as a transmitter of energy. When the string is activated by the blow of a hammer, it vibrates and this energy excites the wood of the bridge. The bridge, which is made of hardwood (maple or beech) transmits this energy to the soundboard. The

Bridge notching: Prerequisites needed for this work are: sharp chisel, protection over soundboard, cushion to rest left elbow on, sharp eyes and good coordination. Chisel is hit with heel of right hand. (Courtesy, Euterpe Pianofortefabrik, Langlau, West Germany)

Pinning the bridge: While hammer drives in pins with three sharp blows, other hand grabs the next pin and places it into position. Pins are a consistent height, judged by eye. (Courtesy, Euterpe Pianofortefabrik, Langlau, West Germany)

soundboard, made of spruce and being under tension, is receptive to this energy, and services as an amplifier to the sound. A tuning fork struck on your shoe to get it vibrating will be amplified greatly when the bottom of the fork is placed on the bridge or soundboard.

The third main function of the bridge is to hold the strings in place on the bridge, thereby spacing the unisons of the piano scale. The bridge pin holes are carefully drilled in such a way that the unisons are spaced evenly. The spacing of the hammers, whippens, keys and damper action are all dependent on the spacing of the strings. The bridge should hold the strings securely. This is done through the use of bridge pins that are driven into the holes drilled at an angle in the hardwood body of the bridge. The bridge is notched generally from the middle of the hole outward so as to give the vibrating part of the string a definite starting point. Most European manufacturers start the notching at the 2/3 point into the diameter of the bridge

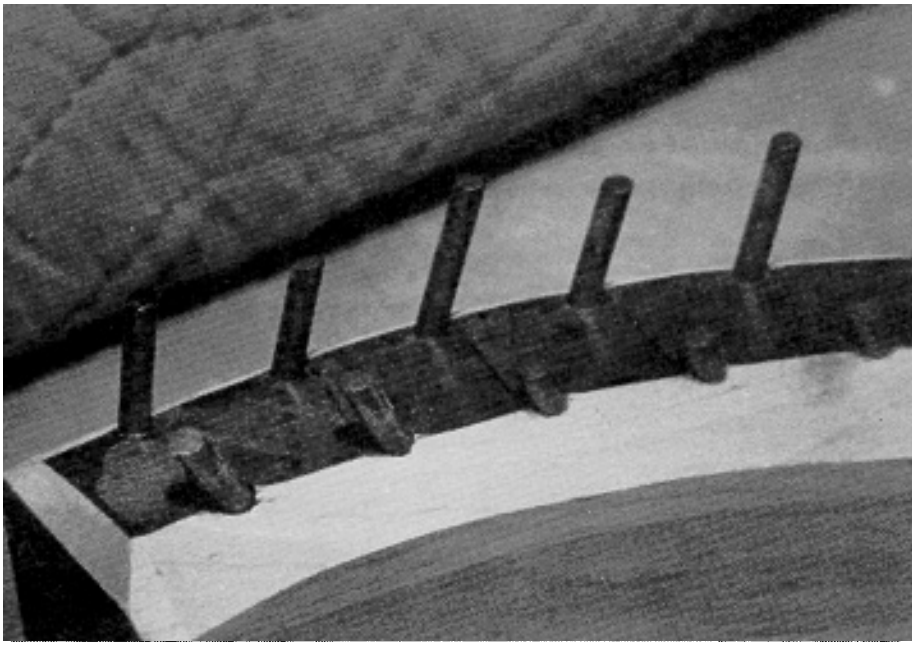


Pins are all different heights. This is not good practice. Pins are driven in bridge at an angle so as to hold the strings in place and to hold strings down on bridge. If pins are too low, the string may ride up and off the pin.

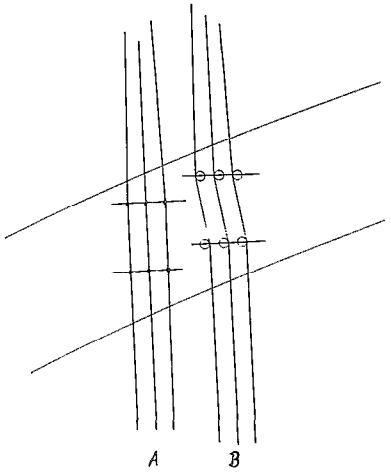
pin hole. As the string settles into the bridge, the speaking length begins at the mid-point of the bridge pin.

If the notching is too far back (no part of the hole remains on the flat surface of the bridge), the bridge pin will be standing "free" in the notched-out portion of the bridge. If not enough of the hole is notched out, the string will hang-up on the flat surface of the bridge and cause unclean sounds.

In order to touch on some of the basic bridge notching techniques and what is good practice, we would like to use as an example a good quality instrument that had a history of being very difficult to tune, due mostly to wild strings. Careful examination of the bridge showed that one could pull out the bass bridge pins with your fingers and that the treble bridge notching was not consistent with good practice. All the bridge pins were loose and easily pulled out. The notching was cleaned up and both bass and treble bridges were repinned. Slightly larger bridge pins were used. Care must be taken to make sure that the holes in the bridge are the right size for the pins. Should the holes be too small for the pins to be used, drill out the hole slightly so that the pin will have a tight fit. If one tries to make the pins overly tight by using pins that are simply too large, disastrous results may occur. The bridge along all the pins may crack open, possibly making a whole new project necessary — that of recapping the bridge. Likewise, if the holes are too big, the pin will naturally not be tight, which does not contribute to a "secure" termination of the speaking length of the strings. If the bridge pins are easily pulled out either with your fingers or with help of a small pliers, you can safely assume that the pins are too loose. If larger pins are not available, the holes can be "lined" with epoxy material that takes up the space in the hole, making the pin tight. Care must be taken to use these materials properly; make tests on something else before working on the piano. There are several good products on the market very suitable for this kind of work.



Loose pins. These pins could be pulled out by hand. Epoxy was used to "line" holes to make pins tight. Notice the angle of the pins. This is a good example which shows where the bridge pin contacts the string.

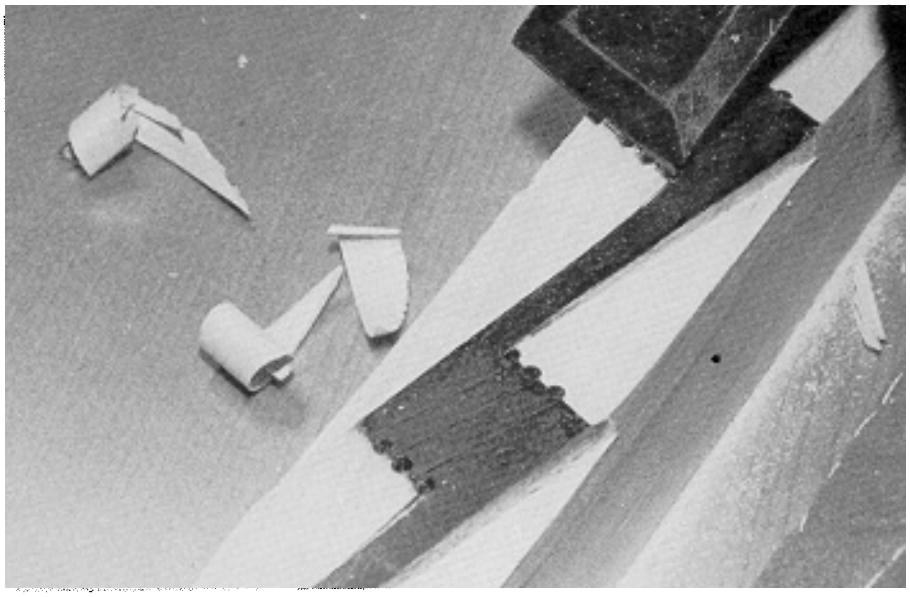


Sketch A: ***Center of bridge pin is on a straight line that a string makes while on its way to the hitch pin.***

Sketch B: ***Sidebearing on the string is created by drilling the bridge pins at an angle on these center line points. The string contacts the left side of the pins on the top part of the bridge and right side of the pins on the bottom set of pins. The amount of side bearing on the strings is also affected by the diameter of the pins used and the angle at which they are drilled.***

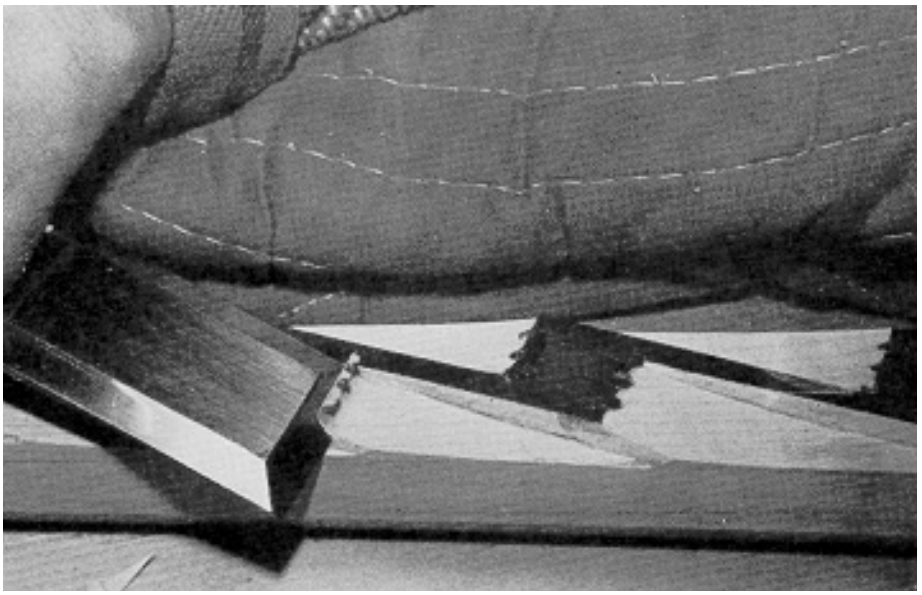
In piano construction, the placement of the plate, height of the bridge, bearing, scale spacing, bridge notching and pinning are all related. In some factories this is considered one unit of work and may be done by one person. The plate is fit to the inner rim and leveled so that it fits securely on its rim contact points (dowels, lag-bolts, or hardwood surface) and with the pinblock. The bridge is then planed down to the correct height which is determined by the amount of bearing one wishes to have. It is then marked for the drilling of the bridge pins by use of a template and then drilled, notched and pinned. Another method for doing the same work involves working with a finished bridge that is already drilled, notched and pinned. The bridge is then glued on the soundboard, and the plate is fitted to the rim to account for the desired bearing along the length of the bridge. In this method, the height of the finished bridge has to be very close to being correct so that adjustments in fitting the plate are not extreme.

We are very grateful to Mr. Nijhof of the Euterpe Pianofortefabrik in Langlau, West Germany for the use of these first four factory photographs. He took these production pictures in the Euterpe factory and has graciously let us use them to show and illustrate good principles in factory piano building. □



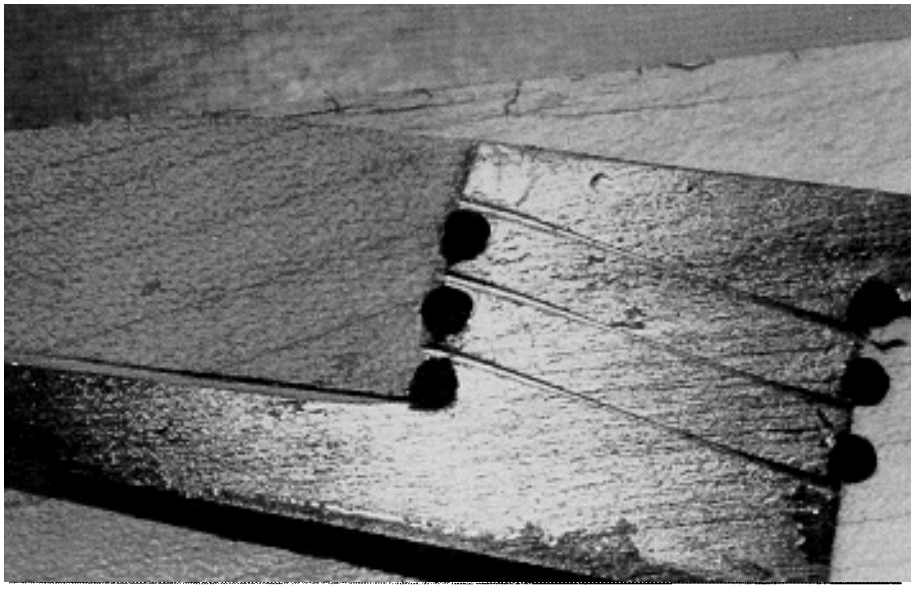
Placement of chisel over portion of hole to begin the notch.

Position while notching bridge. Body weight is supported by left elbow on pad. Left elbow pivots and adds control to chisel while right arm and shoulder do the work. Safety precautions: Fingers and hands should be kept free from chisel blade and surface of bridge.

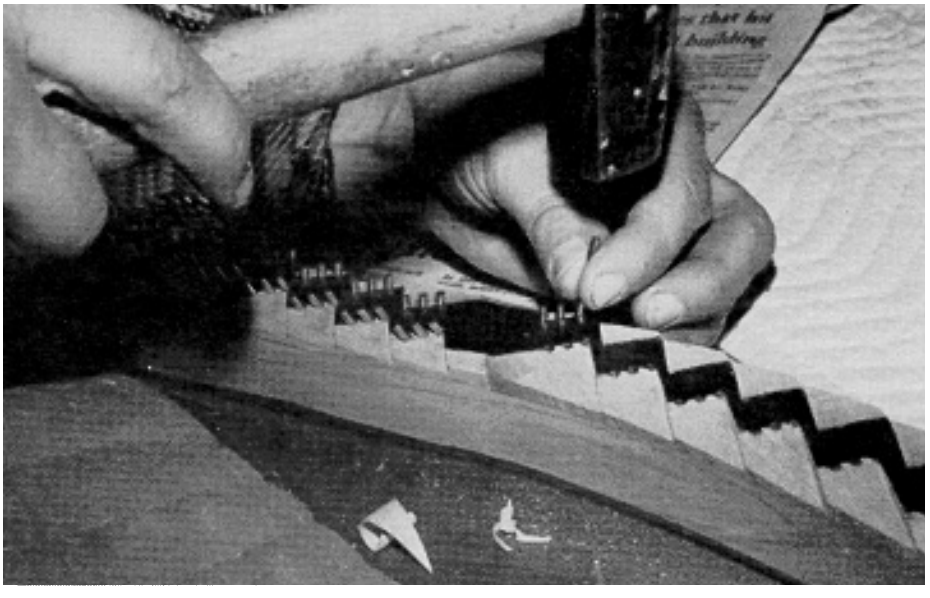


Close-up view of clean notching.

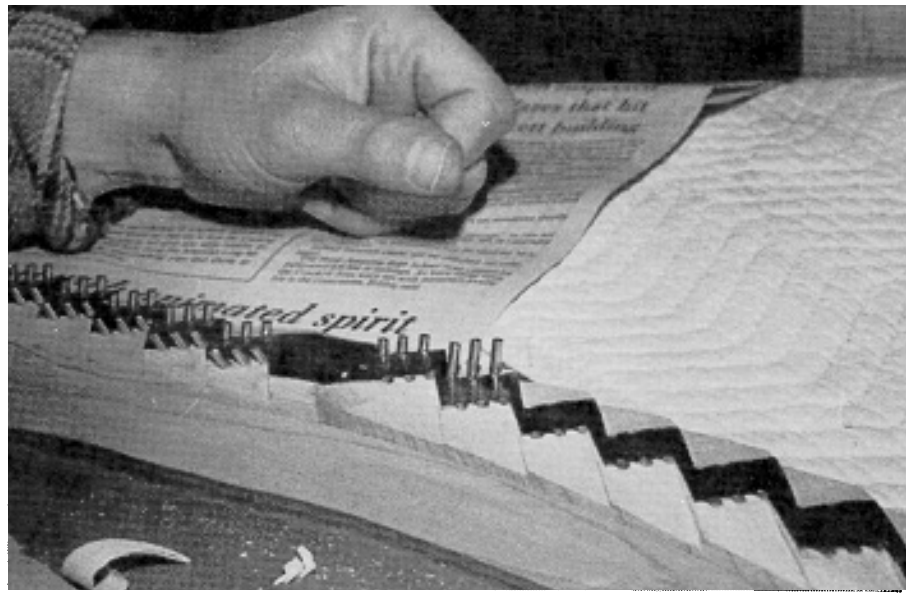
Use of chisel as a knife to cut out loose wood in notch.



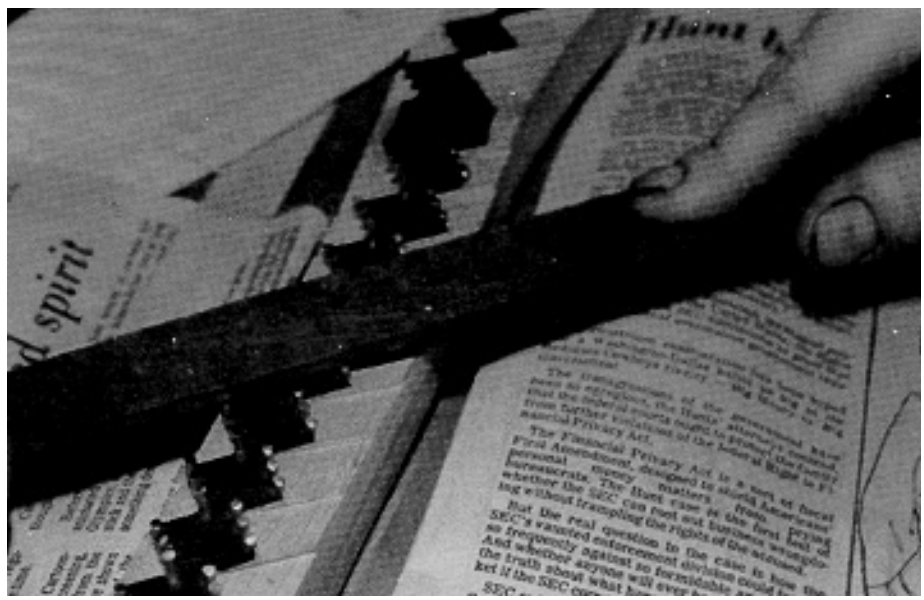
Holes on right side show correct beginning of the notch. Holes on left are not notched out enough. String impressions in bridge show that string contacted bridge flat surface past the center of bridge pin.



Pinning the bridge. Height of the bridge pins should be approximately two times the diameter of the string used in that area. The point of the bridge pin should hit bottom of the hole drilled in bridge so that the termination of the speaking length of string is solid. Everything about the bridge and its pin is secure and tight.



Last 3 pins are too high. This is not good practice. Some authorities say they will vibrate; others say it doesn't look good.



Filing bridge pins to an even height. If pins are generally the same height, filing the tops in the direction shown is no problem. Use coarser file first, then a fine metal file. Caution should be exercised so as not to overdo filing bridge pins. The vibration and the heat that can build up could possibly cause loose pins in the future.

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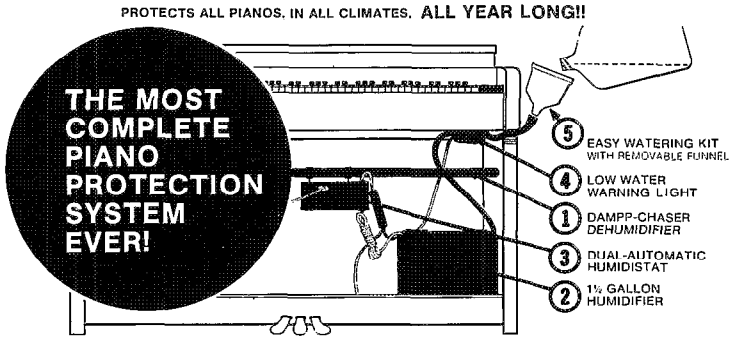

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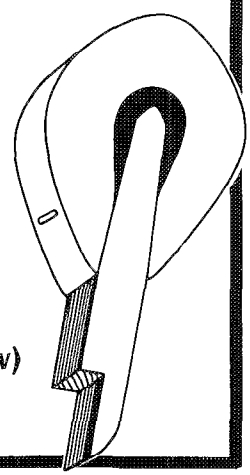

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Vacuum Line
Continued from page 14

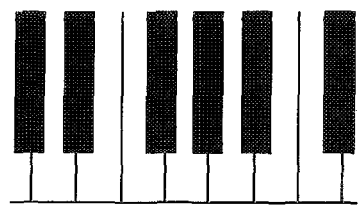
This idea was furthered and the first Nickelodeon was made by Universal and introduced at the NAMM Show at Disneyland in January, 1978.

...all of the parties involved learned a lot from the experience, which was their only compensation for a sizable financial loss.

"It can be said at this time that all of the parties involved learned a lot from the experience, which was their only compensation for a sizable financial loss. They realized that in order to succeed with a project of this nature, better production techniques would be required, as well as labor-saving tooling. A main purpose of the venture was to prove to a manufacturing corporation that the concept of the player mechanism was viable and could be tremendously beneficial to them. Contractual arrangements were made with the partners whereby the piano manufacturer would be licensed on a royalty basis to utilize the parts and engineering then owned by the partnership. The manufacturer exercised his option to cancel the contract and at the time, commented than the new concept would be more costly than what they were using, and that the cost increase would not be accepted by the consumer.

"The partnership was in a quandary as to what to do from this point forward. It seemed as though no other piano manufacturers were interested in pursuing the project, and hence it was in limbo for several months. Don Barr interested Albert Grossman, his law partner, David Saphir and Dick Carty in taking another try and going into the player piano manufacturing business. The manufacturing was to be done under the direction of Don Barr, with some assistance from David Saphir. Dick Carty was to lend his reputation and expertise to the project and establish quality standards, etc. David Saphir, a multi-store piano retailer, used his best efforts to get a manufacturer to build pianos for the new company, which was to be called, 'Universal Piano Company'. To this end, arrangements were made with Kohler and Campbell regarding a meeting to discuss the feasibility of their manufacturing player pianos for us. Don Barr and Dick Carty visited the Kohler factory in Hickory, North Carolina, and met with its powers that be. Kohler and Campbell indicated that they would go along with us for an order of 250 instruments. The number seemed absolutely monumental and the partners thoroughly discussed just how long it would take Dick Carty and David Saphir to get rid of the pianos through their retail operation, and to their piano retailing acquaintances. The partners were quite cautious and concerned, but took the bold step and ordered the pianos.

"Don Barr set about to develop the metal spool box and make other design changes which would enable the mechanisms to be reliably assembled with non-player experienced personnel. The development process has never really ended, and changes are constantly being made and pursued. The store of success from this point on is well known among everyone in the field, from manufacturer to retailer."□



After Touch
Continued from page 15

action at a time. I use a machinist rule with a sliding pocket clip. The clip is adjusted to mark off 2/3 the blow distance. The sample hammers are put into check and the height at which they check above the hammers at rest is measured. The backchecks are bent with the fingers until all of the samples are checking at the correct distance.

At this time the action is reinstalled back into the piano. The sample hammers are tested for reliability and evenness. If changes are needed, they are made now. The action is removed and the remainder of the backchecks are regulated in that section. Take note that the checking distance may not have to be the same for each section. In fact, if the hammers can check a little closer to the string in the treble, which is usually possible, it will give a little faster repetition, which is certainly desirable.

After all 88 keys have been regulated, perform the following tests:

1) With the action out, place one hand about two inches above the hammers at rest. Give each key a good hard test blow with the other hand. If the backchecks are rubbing even the slightest on the hammer tails as the hammer rises, this *must* be corrected. Either the backcheck bevel is incorrect or the checking distance is too close to the strings. In rare instances, the curvature of the tail is at fault. A good guide to the proper backcheck bevel is for the hammer to always catch, either on a soft or forte blow. When in check, a technician should be able to push the tail down into the backcheck about 1/4" further, but not all of the way through. The only exception is on a very pianissimo blow, where the strength of the repetition spring may keep the hammer from check altogether. If the piano is to be tuned immediately after regulating, I often combined this step with my tuning. I like to "pound" my tuning in, and if I notice that the backchecks are interfering, I'll correct it then.

2) With both hands, depress groups of keys chromatically to see if they all check evenly. I normally use one hand on the sharp keys, the other on the naturals.

3) If the dip was regulated after the backchecks, recheck the hammers for correct checking distance. Touch up as is necessary.

4) Play each key softly and watch the hammers go into check. The performance here is very important. If the hammers refuse to stay in check, see if the tails need to be roughed up a little. Otherwise watch for worn backcheck leather. If the hammer appears to bounce away from the backchecks, recheck the repetition spring tension for too much strenght, or perhaps the bevel is incorrect.

5) When all is finished and the piano is put back together, if one or two backchecks are misbehaving, they sometimes can be pushed in or out a little with a long screwdriver.□

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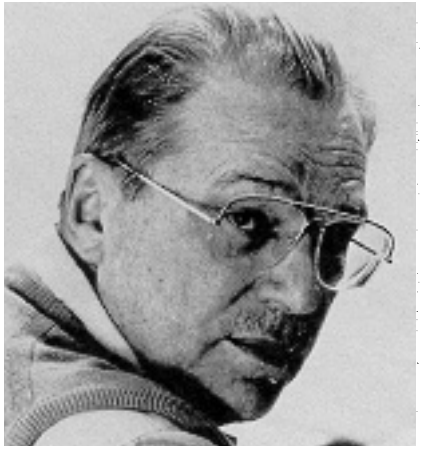

Charles P. Huether
Vice President

Every organization has membership turnover. Each year there are those who drop out for reasons over which we have no control: death, retirement, disability and change of occupation, plus those who drop out for reasons they do not choose to share with us. We have been fortunate in the Piano Technicians Guild to have a rather low percentage of turnover for organizations like ours. We have also been fortunate each year to more than replace those who leave our membership rolls. For 25 years our membership has continued to grow. When the Piano Technicians Guild was founded by merger of two previously existing organizations, the membership was a little over 1,000. Today we are over three times stronger.

Continuous and steady growth in the past does not justify resting on our laurels. There is need for our organization in our industry. Anyone who takes his work seriously will recognize that membership in an organization of like-minded professionals is the best way to advance in skill and profit and at the same time protect and expand the overall industry.

Piano Technicians Guild members cannot afford to believe that the efforts of a few will do the job of bringing in new members. We cannot assume that potential members will find us all by themselves. We need the conscious effort of every member to generate membership.

Each one of us, as we go about our daily routine has the possibility of meeting potential members. And when we meet non-member technicians, make sure the Guild comes up in the conversation, even if only to invite someone to a meeting or to get them on the secretary's mailing list for an invitation for a meeting.

Each one of us, working through our own customers, must educate them about the organization to which we belong. They in turn will mention the Piano Technicians Guild to their friends. Result — someone asking a non-member why he/she doesn't belong; and now we have a new motivation to consider joining.

This process is undramatic, immediate results are hard to see. But if there are three thousand recruiters dropping hints, the results will show in dramatic fashion by year's end. Let us keep the Piano Technicians Guild name before the public. Let us keep growing. □

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President's Message

Happy New Year! Happy New Year, you say . . . the tough economic times must have gone to Julie Berry's head and attacked her brain. No, that's not the case, and you can still plan to celebrate the beginning of 1983 on January first, but please indulge me while I explain how this might be a good time for you to celebrate a new year with your piano technician and the family business.

We are just nearing the end of summer. Summer is not usually the busiest time of year for a piano technician. The Piano Technicians Guild knows this; one main reason our national conventions are always held in July is so the technicians don't miss out on as much work when they leave town to attend the convention. Summer is a time to take things easy and rest up a bit. Many technicians who rebuild pianos schedule the bulk of their rebuilding work to be done over the summer. Technicians who handle lots of school pianos are not usually working in the schools during June and July. Customers are spending a lot of their time outdoors so they don't think about having the piano tuned in the summer in many parts of the country.

However, when hints of autumn are in the air most piano technicians begin their busiest season of the year. Schools are getting ready to open their doors so they send out work orders to have all the pianos tuned and serviced. Children (and adults) sign up for piano lessons which often begin in September, so people realize it's time to get the piano tuned. Churches look forward to increased attendance now that the summer vacationers have returned, so they start planning their fall programs and they want the pianos tuned and fixed. If your business has been unusually slow you will be eager to hear the phone start ringing as these people call you with their business.

The end of summer marks a new beginning for many of our businesses, a time for assessing and evaluating the way we have handled our businesses in the past and a time for deciding if there might be some improvements we could make before the new season begins. So, you see, in many ways the beginning of fall does mark the beginning of a new year and a time for a fresh start.

We have always found it to be a good time to sit down together and evaluate our pricing structure while we are still somewhat relaxed from the summer break. Sometimes it is easier to find time to straighten up the shop at this time and to re-arrange the location of tools and work centers for better efficiency. It is a good time to go through the parts inventory and write up orders for piano supplies. Even if we don't place the orders until the cash flow picks up, the work of making out the order will have already been done before the fall season begins. If we don't have as much business as we would like to have, now is a perfect time to decide what we are going to do about it. Many symphony programs, piano teacher directories, and other annual advertising opportunities present themselves at this time of year. We have always had great success with sending newsletters to our customers, and the "new year" that starts in the fall is a super time to send out a newsletter of mailer.

I know that many of you do not actively participate in a piano service business, but I feel you are interested in the welfare of the business or you would not be reading this column. You can be of tremendous value to the technician in your family by offering to sit down together and talk about how the business is going, what can be expected in the months ahead, and what can be done to turn some of your hopes into realities. That will help make it a happy new year for you both.

Julie Berry

L.A. Chapter Elects Officers

Norma Lamb, president of the Piano Technicians Guild Auxiliary, writes to tell us her chapter has just elected new officers for the coming year: Pauline Miller will be president; Dorothea Odenheimer, first vice president; Thelma Berg, second vice president; Ivagene Dege, treasurer; Marge Evans, recording secretary; Norma Lamb, corresponding secretary; and Fern Morton, historian. Looking at that impressive list, you may decide the Los Angeles Chapter has more officers than your chapter has members! It is true that the L.A. Chapter is by far the largest and most active Auxiliary chapter in the country. (Accordingly, the L.A. Chapter of the Guild is also quite large.) However, you shouldn't feel bad if your Auxiliary consists of three or four people who get together a few times a year and enjoy each other's company. The purposes of our organization can be met by a small group of three or four as well as by a group of twenty or thirty. As long as your meetings help you become better acquainted with others in your area and they give you an enjoyable way to share an interest with your husband or wife, the Auxiliary is serving its purpose. Many of our members have no local chapter affiliation at all and participate quite fully as members-at-large. It has always been the diversity of this organization across the various regions of the country which makes it so interesting to be part of the Piano Technicians Guild Auxiliary.

How Did You Like It?

Now that the convention is over it would be a super time for you to give us some feedback about the Auxiliary program. What activities did you like the most? The least? What would you like to have in New Orleans that we did not offer in Washington? What kind of entertainment do you enjoy? What could we do to make your stay at the convention more valuable and more enjoyable? If you didn't attend the Washington convention and it would help us to know the reason why, please drop us a line and tell us.

The planning meeting for the next convention will be coming up in just a few weeks. It would be great if you would take a few minutes to jot down your thoughts. (Now if you think it is funny to be planning the next convention already, you can imagine how funny I feel asking you how you enjoyed the convention when, at the time I am writing this, the convention is still three weeks away.) Send your ideas to me (Julie Berry, 6520 Parker Lane, Indianapolis, IN 46220), and I will see that they get to the right place. Thank you.

Newsletters, Newsletters

Even as you read this, typewriters around the country are busy producing copy for newsletters. Many chapters of the Guild use newsletters to communicate with members of the chapter, to keep them posted about Guild events, and to share technical knowledge. Schools, churches, charities, and most other organizations find newsletters helpful ways of spreading information they want people to know. Have you ever considered what a newsletter could do for a piano tuner's business? As I mentioned at the beginning of this column, we have had great success sending newsletters to our customers. I thought I would spend a minute to share with you some of the things we put in our newsletters.

We always try to put a picture of the technician in the newsletter so our customers will know this letter comes from the person who tuned their piano before. And somewhere in the newsletter we have a little box where we fill in how long it has been since we last tuned their particular piano. (One lady called in a horrified hurry and said she had no idea it had been thirty-seven months!) We feature short articles about different parts of the piano, for instance, how hammers are made or what the pedals do. We try to illustrate our newsletters with pictures of piano parts and composers. Usually we mention the Piano Technicians Guild: what it means to be a registered craftsman, what kind of activities the Guild sponsors, what seminars our technician has attended recently, etc. We try to keep the newsletter from being too dry or too technical, because we want the people to read and enjoy it. We don't use it to brag about the technician's abilities, but we try to write well-informed articles that let the customers know they have a chosen a tuner who will take good care of their pianos. We offer several tips on piano maintenance, and we encourage customers to call us with questions about their pianos or about pianos they might want to buy.

Each time we send out customer newsletters we get a few calls from customers thanking us and telling us how much they enjoyed getting the newsletter. We have even had people request to be put on our newsletter list because someone told them we send out newsletters. Many of our customers give their newsletters to their neighbors along with a recommendation to call the tuner. In a subtle way the newsletter lets our customers know we are still doing business in the same location with the same telephone number.

The newsletters which are returned marked "ADDRESSEE UNKNOWN" or "MOVED, LEFT NO FORWARDING ADDRESS" also help us update our customer files.

Sometimes we think newsletters are just for organizations and charities and schools, but, in fact, they are a great way to communicate with your customers in a low-key, thoroughly enjoyable manner. And the results can be both long-lasting and extremely effective. □

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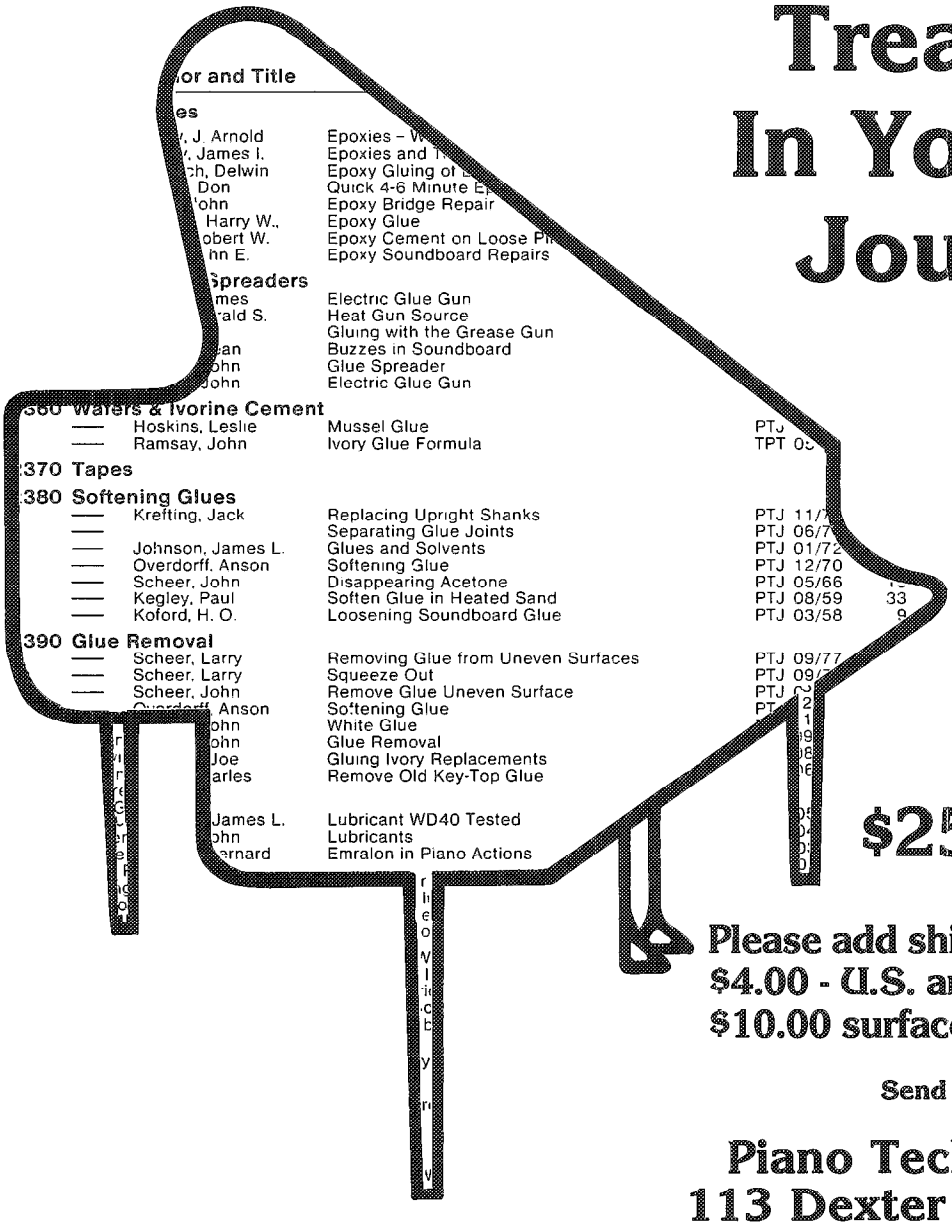

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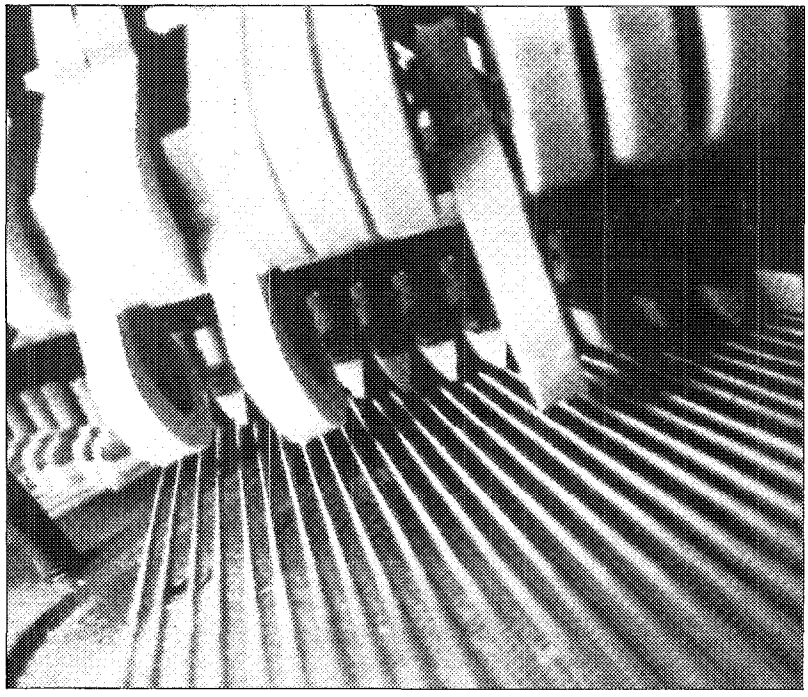

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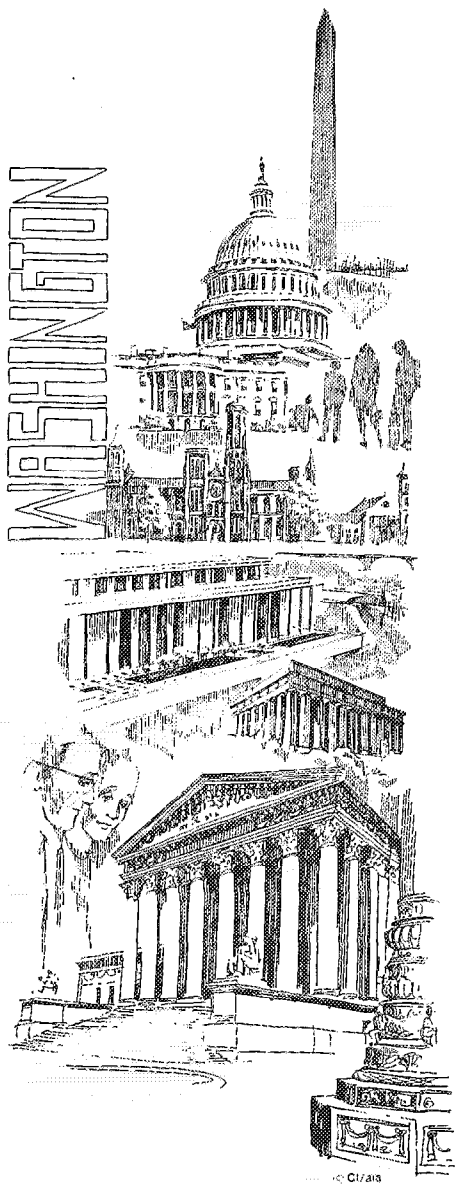
Piano Technicians Journal

UPDATE

August 1982

The Silver Anniversary Convention — A Reflection

Don Santy
Executive Director



The Great 25th is now behind us.

We would like to have had more members in attendance, but the event was reported as stupendous. The local Washington, D.C. host Chapter outdid themselves in making people feel at home, helping out wherever they could and produced some truly outstanding entertainment and activities.

The next issue of the Journal will be the Convention issue. Members will be able to see their friends and fellow craftsmen both in action and the printed word. The New Orleans Chapter President, Martha Lagoy, was the official convention reporter. Her dynamic chapter will be taking their turn in 1983 to host the annual Convention and Technicial Institute in New Orleans.

Ben McKlveen will be the Institute Director; Ernie Preuitt the Guild President, and the same Home Office staff will be there making sure things run smoothly and efficiently.

It might of interest to those who were unable to attend Washington, D.C. this year to know that both the President-Elect, Ernie Preuitt and the Executive Director, Don Santy were missing. It seems that things went just fine without them, which if course gives both of them cause for worry. Ernie had a gall bladder attack and Don Santy picked up a virus in Kansas City while looking over hotels for the 1985 meeting. Both men were out of commission during the entire convention.

President Sid Stone, and newly elected Vice President Charlie Huether carried on with great skill and determination, while the excellent Home Office staff filled in for the Executive Director. This, of course, is why a management firm is so handy to have. Our organizations are never without back-up staff to handle the administrative details, especially when something goes wrong.

The new board members elected at the convention are: Ron Berry, Secretary/Treasurer, Olan Atherton, who took Tom Blanton's place as Regional Vice President of the Southwest Region and Robert Perkins took the late George Peters place in the Central East Region. The rest of the RVP's are "hanging in there", giving at least another year of service to the Guild.

About one quarter of the Guild membership gathered this year, slightly less than last year. We feel certain that the economy had something to do with it and with the excellent regional and state seminars in operation throughout the country, we also feel that many members are taking advantage of this convenience. Much can be said however, about the advantages of a meeting, national in scope. Representatives from throughout the world give it an international flavor along with nationally prominent technicians who add to the overall effectiveness of a national gathering. The experience of getting to know fellow technicians from all over the country is unique and wonderful and one not likely to be forgotten.

"Piano Technology: A Profession Or A Trade?"

Kelwin J. Bakker

Reprinted from the Piano Technicians Journal, July 1977

The whole idea of professionalism as it applies to our business perhaps needs some clarification. We need to define professionalism to some extent and see what it is that we must do to attain it.

Carr-Saunders and Willson's book *The Professions* gives a short summary of what constitutes professionalism. They commence by saying that a professional is what he is by "(1) virtue of prolonged and specialized intellectual training and (2) the acquiring of a technique which (3) enables the practitioner to render a specialized service to those who receive it (4) for a fixed remuneration. Professionals (5) develop a sense of responsibility and (6) build up associations to test the competence and maintain the standards of conduct of the members."

Of these six criteria, they suggest that the distinguishing and overruling characteristic of a professional is the possession of a technique.

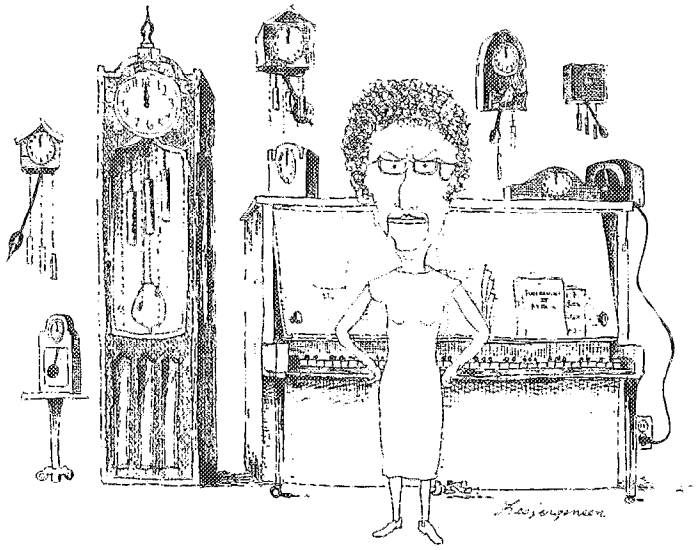
Some other writings suggest that professionals are motivated by altruism or "working for some aspect of the good of society".

Also, a professional's function has to be handled as a single task and cannot be routinized. The professional serves people who need him on a personal basis and does not simply deal with inanimate objects. His service is highly valued in the culture in which he finds himself.

Five identifying characteristics of a professional are:

1. He is an educated man, master of a body of knowledge which can be passed on to students.
2. He is an expert man, master of some specific cluster of skills. These skills, while requiring some talent, can be learned and sharpened by practice under supervision.
3. He's an institutional man, relating himself to society and rendering his service through a historical social institution of which he is partly servant and partly master. Even when he has a private practice, he is a member of a professional association, which has some control over his activities.
4. He is a responsible man, who professes to be able to act competently in situations which require his services. He is committed to practice his profession according to high standards of competence and ethics.
5. Finally, he is a dedicated man. His dedication to the values of the profession is the ultimate basis of evaluation for his service.

The definitions of professionalism are still in the making to some degree. In fairness, it must be said that not every profession meets all the above standards.



PIANO TECHNICIANS GUILD ORGANIZATIONAL CHART

COUNCIL — LEGISLATIVE BODY

The voting membership is composed of one delegate or alternate from each chapter carrying one vote per franchise member in good standing. Regional Vice President acts as the delegate representing the members at large in the region.

BOARD OF DIRECTORS

- PRESIDENT
- VICE PRESIDENT
- IMMEDIATE PAST PRESIDENT
- SECRETARY/TREASURER
- SIX REGIONAL VICE PRESIDENTS

HOME OFFICE

Serves the membership.

Administers policies and directives of the Council and Executive Board and Laws of the Piano Technicians Guild, including:

—Publication of Journal
—Piano Technicians Guild Finances
—Maintains official records
—Coordinates conventions
—Administrative supervision of all business functions

SIX REGIONS IN USA AND CANADA

- **CHAPTERS** — Self governing subordinate bodies chartered under the bylaws by council
- MEMBERS AT LARGE

AREAS OUTSIDE USA AND CANADA

- AFFILIATE MEMBERS

By Robert Smit
1981/1982

Chapter Notes

There were seventy people attending the **Philadelphia Chapter** Banquet at Williamson's, atop the GSB Building, on the 13th of May. The Banquet committee consisted of Bert Sierota and Shirlie Felton and the interesting guest speaker was Charles Huether. Entertainment was provided by Sim Jackendoff, Eben Goresko, Susan Lou, and Joe Levin — truly an all star cast! The food, the room with a view, the almost new Yamaha piano, and even the No Smoking section was well received.

I would like to say something to those of us who are waiting for things to get better. That is the problem, things don't get better by waiting. Get up from that chair and do something about it. Support your local Piano Technicians Guild Chapter and in so doing, you will help yourself. *Come on down.*

—Hilbert Felton

At the May meeting of the **Washington, D.C. Chapter**, we decided that Chandra Fortune, an award-winning piano student of Christian Engleman, would be the recipient of our Chapter's Scholarship Award this year, and we are looking forward to seeing her at our next meeting. Also, our IPP Ned Dodson, who has been recuperating from a stroke since December, was presented a plaque from the Chapter for his dedication and service as President. In a heartening speech Ned thanked the Chapter for all the support and friendship shown him these past five months. Mark Anderson got off a few good shots of the assembled Chapter and guests for immoralization via the Silver Anniversary Convention program.

The Western North Carolina Chapter took time away from planning the 1982 North Carolina State Convention to tour the Mapes Piano String Company in Elizabethon, Tennessee. On Monday, June 14th, four members and sixteen visitors were hosted for lunch and given a very interesting and informative tour. All aspects of piano, guitar and mechanical music wire production were covered during the one and one-half hour visit to the plant. Our hearty thanks and appreciation to Bill Schaff, "Doc" Glover and the rest at Mapes for a terrific experience.

—James S. Dowsett, President

Election of officers highlighted the **New Orleans Chapter** May Meeting. President Martha Lagoy and Vice President Henry Hitt, Jr., were unanimously re-elected. Daniel Skelley was elected to serve as Secretary-Treasurer. After a dormant period, the auxiliary was re-established with Beatrice Skelley as President and Marilyn Wright (a former auxiliary president) serving as Vice President.

Martha appointed a new Examining Committee of four members. Dan Hall was appointed the chairman of another committee to search for a grand piano to purchase and rebuild as a Chapter project to earn money and gain experience. Lloyd Cotten came from Mississippi to give a technical seminar on glues and lubricants. He warned us that it was a sticky subject but we all learned something from it anyway.

—Daniel Skelley
Secretary-Treasurer

There were about thirty-five members and guests present at the May Meeting of the **Connecticut Chapter**. The new president, Gino Bonfietti did a super job conducting his first meeting. He brought up an interesting point in regard to commercial, passenger and combination motor vehicle plates. Technically, a vehicle that is used during the course of business should at least have combination plates. One of "Connecticut's Finest" called Gino to the side of the road for a spot check when noticing his van had his piano service sign with normal passenger plates! Check with your local MV department if you have a question, or think you may be in violation.

The **Los Angeles** June Chapter meeting was held on the 21st, at the Eaglerock Baptist Church. President Richard Davenport presented Beau Randt with the Allied Tradesman classification.

Elvah Brown was installed as our new President, after two terrific years by our out-going officers.

Norman Neblett presented a 10 minute appetizer on his trip to the Oregon Convention where he met technicians with excellent woodworking and tool-making abilities. Brian DeTar discussed in detail the new tuning exam and what to expect when taking it. Everyone ws reminded of the need for more CTE's.

Afterwards, everyone adjourned for refreshments and as usual, the Auxiliary outdid themselves again this month.

—Hope E. Morrow

In Memorium

George S. Peters	Central Michigan Chapter
Mario Sinisi	Long Island Suffolk, NY Chapter
James MacLellan	Santa Barbara, CA Chapter
Joseph Cacheiro	New York City, NY Chapter
Gino Polverari	Connecticut Chapter
Bonnie Freeman	Long Island Suffolk, NY Chapter
Kenneth Carlock	Tulsa, OK Chapter
Clay Chappell	Central Iowa Chapter
Cyril Wezemael	Detroit-Windsor Chapter
C.J. Buchanan	Eugene, OR Chapter