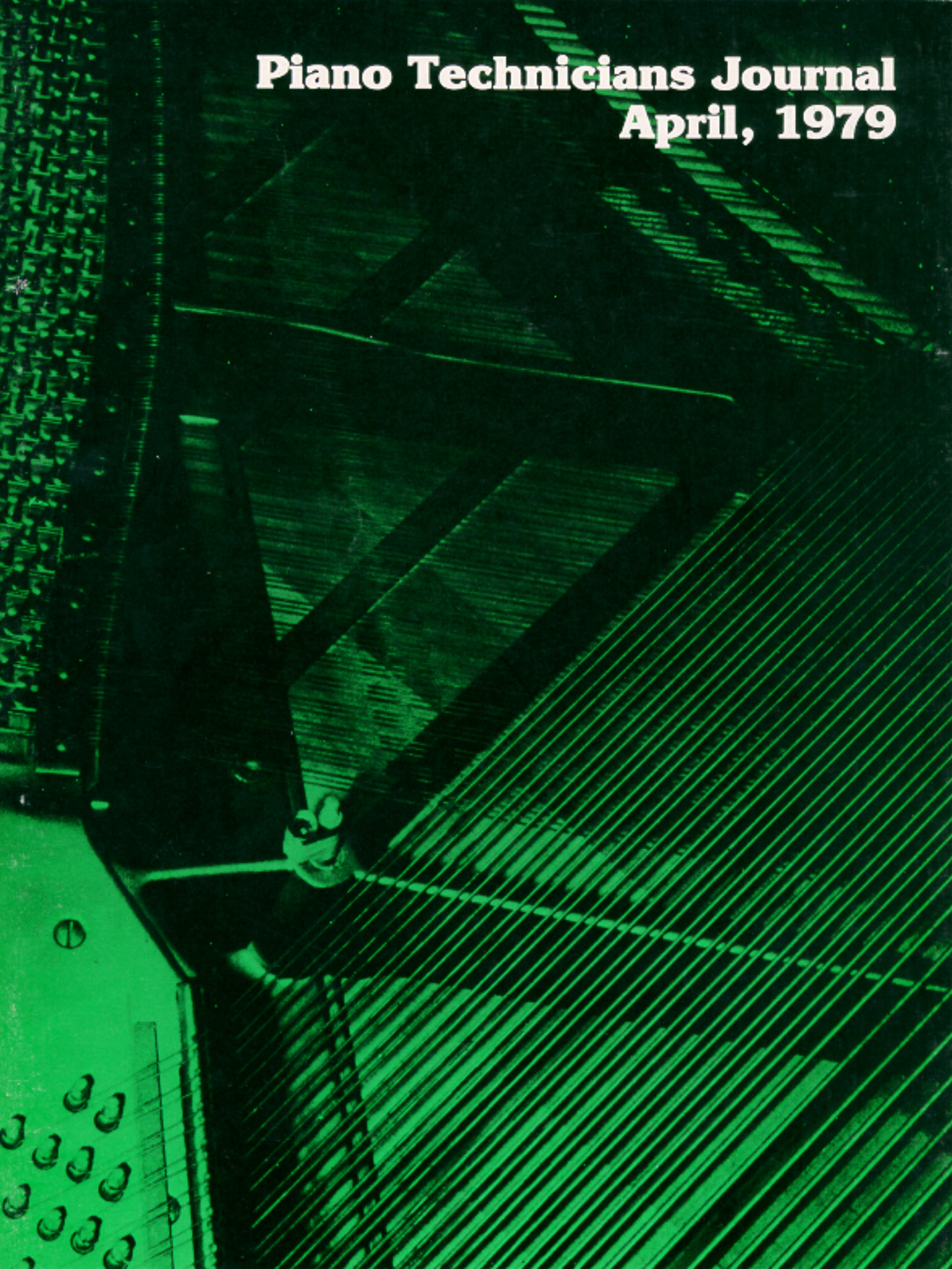
Piano Technicians Journal
April, 1979

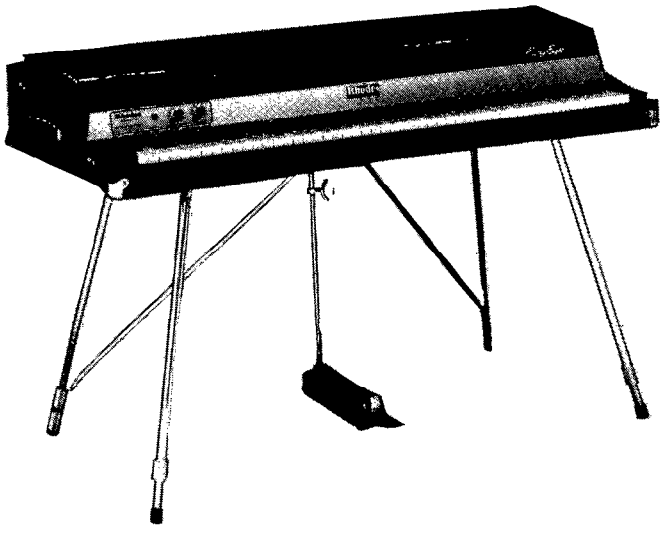


Proud heritage.

Pride and heritage and tradition.
For over a century, we've been making the
finest keyboards and actions for the piano industry.
You know it—some people don't.
That's why, from here on in,
we want the world to know
that the quality of Pratt Read products
stands behind most of the proudest names
in the piano industry.

Pratt, Read & Co., Ivoryton, Connecticut 06442

RHODES ELECTRONIC PIANO REPLACEMENT PARTS



The Schaff Piano Supply Company has been chosen as a national distributor for Rhodes electronic piano replacement parts. We now have in stock the action parts and some major hardware items for both the new modular piano as well as the original model manufactured before June of 1975. By being a distributor, we can obtain any component from any model of Rhodes electronic piano at a substantial savings in cost and delivery time for our customers. We will be happy to send a Rhodes parts catalog and price list free of charge upon request.

◀ Also currently available is the pictured parts kit for the original model as well as the new modular type Rhodes piano. There is a substantial cost savings by purchasing these kits rather than buying the parts individually. Anyone planning to repair Rhodes electronic pianos should begin with the purchase of a basic parts kit.

No. 35-1000 Parts Kit for Original Type Rhodes Pianos with Serial Numbers Up to 49,999..... **Net Price $60.00**

No. 35-2000 Parts Kit for Modular Type Rhodes Pianos with Serial Numbers Over 50,000..... **Net Price 80.00**

No. 35-3000 Service Manual for Rhodes Pianos..... **Net Price 3.00**

THE HOUSE DEDICATED TO SERVICE

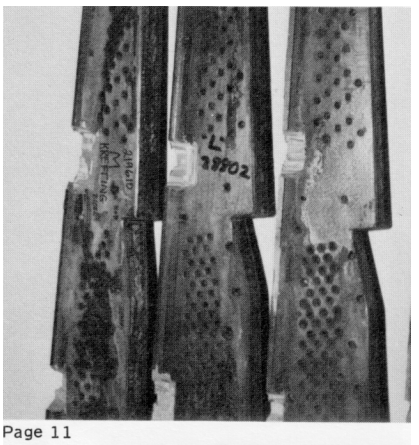
Schaff PIANO SUPPLY COMPANY
451 OAKWOOD ROAD, LAKE ZURICH, IL 60047

Prices Subject To Usual Discount
For Same Day Service Try Our 24 Hour Phone
(312) 438-4556

Piano Technicians Journal

Official Publication of the Piano Technicians Guild/April 1979 Volume 22 Number 4

Articles



Page 11

Page 25

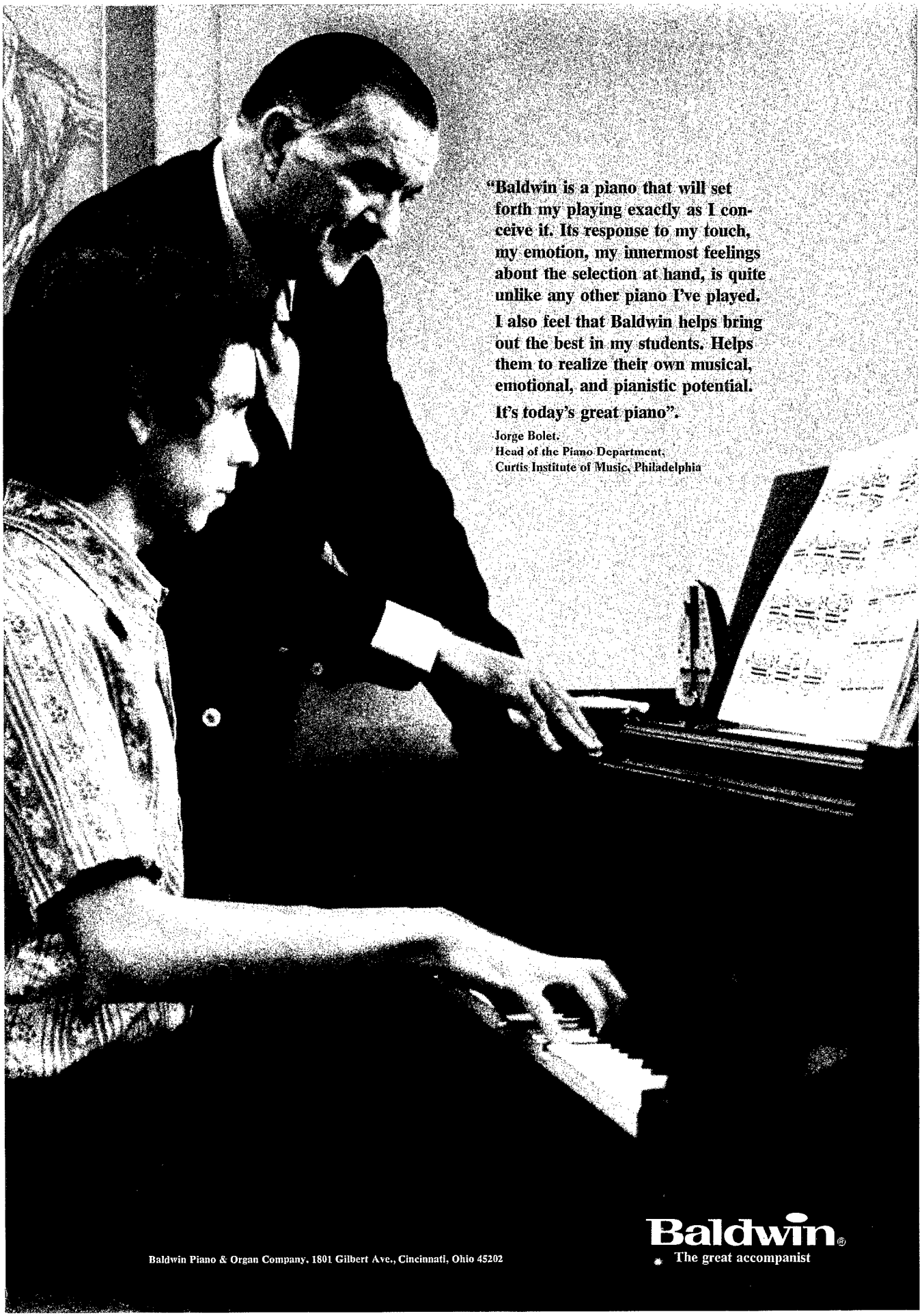
Page 33

The Piano Technicians Journal, the official publication of the Piano Technicians Guild, is published monthly and issued to members twelve times a year. Annual subscription price: $40 per year; $72 for two years; $3.50 per single copy. **Editorial offices** are at 113 Dexter Avenue North, Seattle, WA 98109; or write P.O. Box 1813, Seattle, WA 98111. **Telephone:** (206) 283-7440 or 682-9700. Second-class postage paid at Seattle. **Closing date for copy and advertising is the first of the month preceding publication.** Advertising rates furnished on request.

Piano Technicians Journal Reprint Service

Reprints of most articles appearing in the Piano Technicians Journal are available from PTG Headquarters: 113 Dexter Avenue North, Seattle, WA 98109. Prices per page (plus postage): Single copy, 25 cents; 10 copies, $1; 100 copies (or more), $6 per hundred. **US ISSN 0031 9562** Foreign and Domestic.

Journal Staff


"Baldwin is a piano that will set forth my playing exactly as I conceive it. Its response to my touch, my emotion, my innermost feelings about the selection at hand, is quite unlike any other piano I've played.
I also feel that Baldwin helps bring out the best in my students. Helps them to realize their own musical, emotional, and pianistic potential.
It's today's great piano".
Jorge Bolet.
Head of the Piano Department.
Curtis Institute of Music, Philadelphia
Baldwin Piano & Organ Company, 1801 Gilbert Ave., Cincinnati, Ohio 45202
Baldwin
The great accompanist

EDITORIAL

Letter of Application for Workmen's Compensation Benefits

Dear Sir:

When I arrived at the building site, I found that high winds had knocked some bricks off the scaffolding on the seventh story, so I rigged up beam and pulley on top and hoisted up a couple of barrels of brick.

After I had replaced the fallen brick, there was a lot of bricks left over, so I hoisted the barrel up again and secured the lines at the bottom. Then I went up and filled the barrel with the extra bricks, returned to the bottom, and cast off the line.

Unfortunately, the barrel of bricks was heavier than I and, when the barrel started down, I started up. I hung on and halfway up I met the barrel coming down and received a severe blow on the shoulder.

I then continued to the top, banging my head against the beam and getting my fingers jammed in the pulley.

When the barrel hit the ground, it burst its bottom, allowing the bricks to spill out. I was now heavier than the empty barrel and so started down at high speed. Halfway down, I met the barrel coming up and received severe injuries to my shins. When I hit the ground, I landed on the bricks, getting several severe cuts from the sharp edges.

At this point, I must have lost my presence of mind, because I let go of the line. The barrel then came down, giving me another heavy blow on the head, causing concussion. Now what I want to know is, as an experienced, reliable mason, am I eligible for compensation?

The above letter is supposed to be an actual application for benefits. Unfortunately, in many industries (particularly large ones) incompetence seems to be the rule rather than the exception. Contribution to this situation is the guaranteed job, the generous unemployment payments to many who don't need them, and the health and welfare programs for many of those who could "make it in their own" if they weren't so easy to get. Add to this the difficulty an employer has in firing employees for incompetence, laziness and/or insubordination and we've really got something going!

It's tough not to laugh at this poor guy, but this is a humorous way of looking at a serious problem we are faced with today. Mistakes, errors, oversights, and deletions are running rampant all over the place. The kind of muddling, confusing domino disasters we see in our working friend above appears to be creeping into every industry.

I hear my business friends complain of the cost of mistakes in daily production records and it is appalling! Either people are getting too busy to do things right, the pressure is too great to allow them to do things right, or they just don't give a darn.

I am an enthusiastic boater and it saddens me to hear that the skilled craftsmen who used to patiently carve the interior and deck decorations on wooden boats are a thing of the past. The slow and loving care of each deft cut of the blade resulted in the fine carvings found on expensive custom-made boats. This was a quality and lasting art, but labor rates have made this type of work obsolete. The art is being destroyed by the economy and the machine. Boats with wood carvings are now coming out of Taiwan and Hong Kong. The pace there is slow and wages are low. How sad to have to take a choice.

One boat manufacturer told me that some of the kids he hired had made wrong assembly holes in the hulls of his sailboats and covered them up with putty and paint. You can imagine the problem for the boat owner when he got out into open water. Mistakes, errors, deletions, and slipshod work are taking their toll in all businesses today.

This combination of poor workmanship, coupled with the loss of fine master craftsmen, is difficult for many "old timers" to accept. We have a different breed in the marketplace today — and it effects all of us on all levels of life.

Hiring people today is a different kettle of fish than 20 years ago. The tough generations are gone and we now have people who took art appreciation, bowling, and dancing for credit in high school instead of reading, writing, and 'rithmetic. We used to hire girls who could type 80 or 90 words a minute (without errors); now, if they manage 40 to 50 words a minute and can spell, it's considered good by most placement agencies. Twenty years ago businessmen expected at least 7 hours of production out of an 8-hour day; today, if we get 5 or 6 hours of production we consider ourselves lucky.

What happened? Where did we go wrong? Lots of quarters could be blamed, but I think to some extent it can be summed up like this: "In schools today the teacher is afraid of the principal, the principal is afraid of the superintendent, the superintendent is afraid of the school board, the school board is afraid of the parents, and the parents are afraid of the kids. And the kids — they aren't afraid of anybody." — DLS ■

There are 2080 potential hours of work in a year 52 weeks at 40 hours per week. It has been computed that approximately 40 working hours per year are lost due to sickness, lateness, and personal reasons. Two to three week vacations represents another 64 working hours lost (mostly paid for by the employer). This means a total of 1864 hours left for production; **but** it is computed by experts that 233 hours are lost to an employer due to plain **"goof off time."** This means that the hapless employer loses 457 hours per year per employee. Multiply this times the hourly rate and add 25 percentage for taxes, etc., and its not hard to see the problem.

DON MORTON

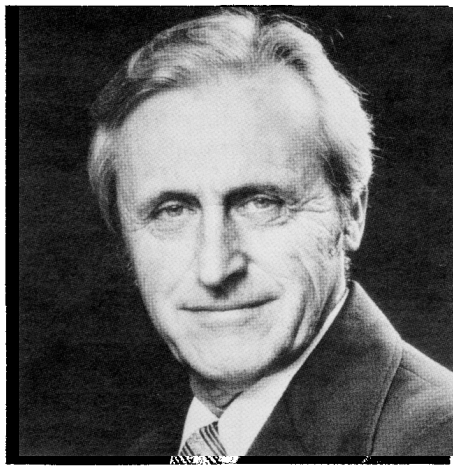
PRESIDENT'S REPORT

In three short months we will be convening in Minneapolis for the 22nd Annual PTG Convention. At that time many important events will take place, one of which is the election of a new president. It hardly seems possible two years have flashed by since I was elected to this high office — it has been busy and challenging. During this time PTG has experienced many major changes. The important question — "Were these changes for the better?" Those of us who have labored hard for these alterations believe PTG will benefit because of them — only history will write the final answer.

One change which is gradually taking place is the upgrading of our Craftsman Examination Standards. Good progress is being made in educating our members on the merits of this new system. This is due mainly to the efforts of the hard-working team of Jim Coleman, Sr., and Albert Sanderson. They are traveling back and forth across the country attending seminars and conferences, teaching and explaining the system, and testing new and old members who desire to get the "straight facts" regarding this method. I strongly urge all members to acquaint themselves with this system of evaluating their tuning ability and compare it to a high tuning standard.

The goal of establishing a world fellowship of piano technicians is gaining support from technicians around the world. Last year a group of some 25 guild members traveled to Japan where they received an enthusiastic welcome by the Japanese technicians. This year, at our national convention in Minneapolis, we look forward to welcoming several members of the Japanese Tuner-Technicians Association as our guests. During the month of June, some 35 PTG members plan to tour many piano factories in Europe (including the British Isles) and meet with fellow technicians in these countries. Our hope is to lay the groundwork for a future world association which would assist in better communications and a sharing in technical information.

There is another challenging avenue opening up as we become more internationally oriented — the opportunity to help the needy underprivileged countries in the area of music. Due to lack of technical knowledge and pertinent information, many localities are without the benefit of the piano. Information is beginning to reach us of otherwise civilized communities who desperately require, and would welcome, a piano technician. The few pianos available in these communities are so in want of repair and tuning

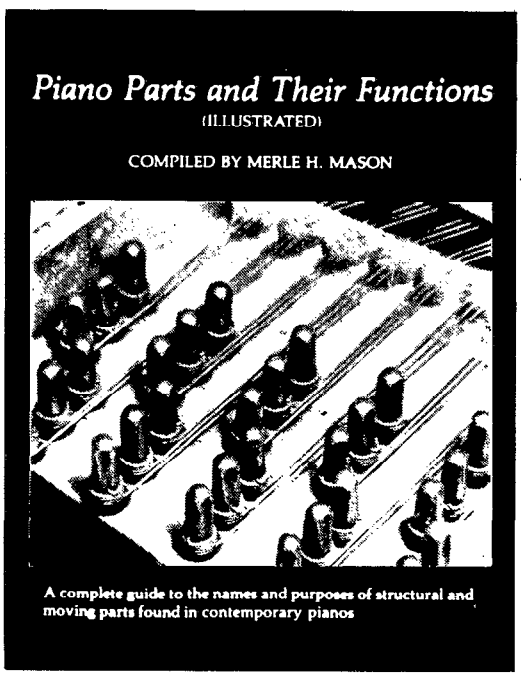


they cannot be used. There is also a need here to teach the local citizens the art of tuning and repair. A day may soon come when the Piano Technicians Guild will be officially asked to help in filling these needs of foreign communities.

PTG is a busy expanding organization. Take a look at the large number of seminars and conferences being held this year in every section of the country. While you're looking, examine the quality and caliber of the individuals organizing and teaching the seminars. These meetings point out one very valid reason for the existence of PTG — **the communication of technical knowledge otherwise not available to the average member.**

Along with development and expansion come additional responsibilities. In our organization this is especially apparent in the areas of management, public relations, and executive abilities. I call these facts to your attention because we need to be constantly on the lookout for these talents within our membership. By and large, piano technicians have not been exposed to experience in these areas; consequently, we are in short supply of these very necessary talents. It is every member's responsibility to act as a talent scout and encourage other members possessing these abilities to assume the elective roles of leadership. In our Guild, according to our bylaws, there is a constant change in leadership. I believe this is a good policy; it initiates new and fresh ideas, stimulates activity, and reduces the development of cliques and inner circle groups. Leaders must be responsible and capable individuals, willing to sacrifice the required time and effort. **Leaders, we need you!** ■

EXCLUSIVELY YOURS.



Inside this definitive text you will find everything you need to know about the functioning of that magnificent musical instrument — the piano. Answers to questions such as "What does a dag look like and where is it located? What is a middle belly bar? Where are the 46 rails located and what is a reconditioned piano? *Piano Parts and Their Functions* is a basic book long needed in every piano technician's library. This first and only publication in English is an essential book no student, teacher, or technician should be without!

(Washington State Residents Add 5.4% Sales Tax)

Member		Nonmember	
Hard cover edition	$14 postpaid	Hard cover edition	$18 postpaid
Soft cover edition	10 postpaid	Soft cover edition	14 postpaid

ORDER FORMS

Member	Quantity	Description	Amount

Mail to: PIANO TECHNICIANS GUILD, INC.—P.O. BOX 1813—SEATTLE, WASHINGTON 98111

BEN McKLVEEN

LUBRICATION OF PIANO PARTS

When pianos are built, the builders concern themselves with lubrication of moving parts in a rather fundamental way. They are concerned with new material assembled under controlled atmospheric conditions and lubrication is a very minor consideration in the construction process. Obvious friction points such as those in the trap work are greased or graphited. In that complicated mechanism called the action, many friction points are treated with a permanent lubrication such as burnished graphite or were designed to be self-lubricating through the use of felt against metal or, more recently, teflon against metal.

When the pianos are completed and shipped, further thought is not given to lubrication since factory people generally have no other contact with the instruments. Once the pianos are sold, however, a whole new set of problems begins to develop, including wear and tear, atmospheric extremes, abuse, and neglect. Lubrication is also one of these problems.

The word "lubricate" comes from the Latin *lubricare*, which means "to make slippery." The trick with piano friction points is to make them slippery and keep them slippery for extended periods of time. A lack of lubrication creates two general problems — sluggish response of moving parts and noise in the form of squeaks.

The anatomy of the piano creates other problems. There are no reservoirs to store lubrication such as oil pans or grease cups. Instead, the lubricants often must function between dissimilar materials, usually as thin films while exposed to accumulating dust and dirt. They must hold up well through periods of use, must not break down during disuse, and **must** not react with the host materials by creating any chemical change.

With the above criteria in mind, let us examine the materials used as piano part lubricants. They fall into two general categories: (1) Solids and powdered solids include soapstone, talc, graphite, and teflon. (2) Liquids include tallow, grease of various kinds, and liquids that utilize some of the powders in suspension. The list of liquids must be expanded to include the sprays available today that have proven to be useful and timesaving.

Many years ago one of the standard lubricants for piano parts was mutton tallow into which was stirred a fair amount of talc or baby powder. With the demise of the neighborhood butcher shop, mutton tallow has been difficult to acquire. However, if you know a butcher who can get you some mutton fat, you can make a lifetime supply of mutton tallow lubricant very inexpensively. Simply put the raw fat in a frying pan and fry it at low heat until it turns to a liquid. Skim or strain the liquid so as to separate it from any fiber residue and allow it to cool. The tallow will be a white waxlike grease. An additional reheating and skimming will improve the quality by leaving behind any missed residue or poor-quality fat. Into this refined tallow stir as much Johnson's baby powder as it will hold without losing its consistency as a grease.

A contemporary substitute for mutton tallow and talc is a mixture called VJ lube, named after the initials of its developer (the late Victor Jackson, a well-known Los Angeles technician). This is made by heating a 7-1/2-ounce jar of Vaseline, and mixing in Johnson's baby powder and a teaspoon of lanolin. It works well and all of its ingredients can be purchased at your local pharmacy. Other lubricants of this type that can be used are Lubriplate and Bendix brake grease. These products have the advantage of staying where you put them. They work well on metal to metal, metal to felt, metal to leather, and metal to wood. This makes them useful on friction points in all trapwork and other spots such as the action frame guide pins, key frame soft pedal contact point, and grand action frame return spring. These products are carried easily, and work well on the job or around the shop.

The solid lubricants include soapstone (actually magnesium metasilicate, a soft mineral with a soapy feel). French chalk, talc, and baby powder are ground varieties of this mineral. They work well in combination with other lubricants as noted above. Soapstone sticks are carried easily and can be purchased at any good hardware store. Talc is a little more difficult to carry around, but is very convenient as a dry lubricant. It burnishes well and lasts effectively; works well on keybeds, key frames, and knuckles; and can be impregnated into felt if need be.

Graphite, another dry lubricant, is simply soft black native carbon. It is available in stick form, as a powder, or in liquid suspension. I prefer to confine my use of powdered graphite to the shop, where I can control the mess and clean up easily. This is not easily accomplished in home situations where spilling on rugs or upholstery can be a disaster. Nevertheless, the powder is a good lubricant, burnishing well on bridges, bushing cloth, small spring friction points, repetition lever cradle tops, keybed dags, and dowels. The liquid formulations make transportation easier and application more controlled than the use of powdered graphite. One of the best preparations of this type is called Dag 154. Don't overlook the use of stick graphite in the form of a soft pencil lead; it is useful for quieting squeaky hammer springs.

The ubiquitous spray can, bane of the conservationists, has provided

us with spray forms of teflon under the names of Slipspray and Emralon. (Emralon also comes in stick form.) These lubricants work well on almost everything, with the added advantage of either a shotgun delivery (in spray form) or rifle delivery (using the add-on tube). While application of these sprays is a distinct advantage, their use is not a cure-all. I prefer to use them as stopgap or emergency cures for noise or sluggishness. Once the liquid portion of the spray has evaporated, the lubricating residue of teflon is very slight and may not give prolonged relief from noise or friction.

A list of piano friction points and suggested lubricants follows:

1. Pedals: Metal to metal — Lubriplate, tallow and talc, VJ lube. Metal to wood — VJ lube, tallow and talc. Metal to bushing cloth — VJ lube, tallow and talc, graphite.
2. Trapwork Dowel Pins (vertical pianos): VJ lube, tallow and talc (thin film).
3. Trapwork Pins (grands): VJ lube, tallow and talc.
4. Vertical Damper Lift Rail Hangers: VJ lube, tallow and talc (if rail is removed for lubrication and repair), Slipspray (if lubrication is made without rod removal).
5. Vertical Damper Lift Rail Surface: VJ lube, tallow and talc (thin film), Slipspray on damper lift felts.
6. Dummy Damper Lever: VJ lube, tallow and talc, Slipspray.
7. Vertical Hammer Spring Slots: Metal to wood — graphite in the form of soft lead pencil. Metal to felt — graphite pencil or Slipspray.
8. Key Bushings (vertical and grand): Slipspray.
9. Grand Damper Lift Rail Hangers: VJ lube, tallow and talc (if removed for lubrication), Slipspray with extension tube (emergency in-place lubrication).
10. Damper Guide Rail Bushings: Slipspray, Dag (graphite in liquid suspension).
11. Grand Keybed: Talc, Slipspray.
12. Grand Key Frame Guide Pins: Lubriplate, VJ lube, tallow and talc.
13. Grand Key Frame Glide Bolts: VJ lube, tallow and talc (thin film).
14. Grand Key Frame Shift Return Spring: VJ lube, tallow and talc (thin film).
15. Grand Dags (key frame stops): Dag (graphite in liquid suspension.
16. Whippen Cushion Felt (contacts capstan screw): Slipspray.
17. Jack Tender: Dag (graphite in liquid suspension).
18. Jack Top: Dag (graphite in liquid suspension).
19. Repetition Lever Cutout (cradle): Dag (graphite in liquid suspension).
20. Grand Hammer Shank Knuckles: Clean and dry, talc (in emergency).
21. For Pitch Raising: Lubricant for bearing points — WD40 mixed with silicone in 50/50 mixture (see later paragraph on silicone). Agraffes — V-bars.

In the above list I have not mentioned the pitman (damper lift rod) in the trapwork of grand pianos. On Baldwins and some other pianos, this rod is pinned at top and bottom, goes through a large hole in the keybed, and causes no problems with malfunctioning or squeaks. On a number of other fine pianos (Steinway, Mason & Hamlin, Knabe, etc.), this dowel rides free in a felt bushed hole, rests on a leather pad on the bottom, and pushes against leather or felt on the underside of the damper lift rail. It will squeak.

Under ordinary circumstances, a thin film of VJ lube or tallow and talc on either end of the dowel will quiet the noise. Overzealous lubrication of the entire dowel often results in loading the bushing of the pitman hole, causing the dowel to hang up. The dowel (usually of wood, sometimes of brass) will then begin to glaze and will be very smooth and shiny, but sluggish in the hole. A thorough cleaning with 4/0 steel wool will relieve this situation for awhile, but must be redone when sticking reoccurs.

If the leather pads on which the pitman rides are not solidly glued down (some are not), they can cause squeaks by riding across the damper tray or the trap level as the pedal is activated. When any of this trapwork bumper cloth or leather becomes too indented, it ceases to function efficiently and should be replaced.

I must say a few words about silicone (good and bad news). Silicone comes in a variety of forms — as oils, greases, and plastics. It is a polymeric organic silicon compound. We see it used as a water- and heat-resistant lubricant. It is also used in varnishes, polishes, binders, and plastics. The good news is that it is a marvelous lubricant; the bad news is that it has fantastic mechanical capillary action. In short, it creeps; it doesn't stay put. Further, it is deadly to finishes, pinblocks, and bass strings, so it **must** be used with discretion.

In the friction points listed above I mentioned silicone mixed with WD40 for use on string bearing points prior to pitch raising. Use this **sparingly** — if you use it. Another way to use silicone safely is to add a little to 4/0 steel wool and polish key pins (both front and balance rails), capstan screw tops, and brass pitmans. Be very careful where you dispose of the steel wool.

Because lubrication of piano parts often involves squeaks as well as malfunctions, it is essential that a number of cautions be observed:

1. Before applying lubrication, be sure that the problem is not caused by a loose part. (Example: A loose Norris spring will make a trap lever squeak. Tighten; don't lubricate.)
2. Before lubricating, clean away all old lubricant. Scrape leather and felt pads and steel wool metal pins and parts until they are clean.
3. Replace felt and leather bushings or pads as they become worn, indented, or glazed beyond useful recovery.
4. Be sparing with lubricant — use thin films. More is not better; a glob will not solve what a film of lubricant failed to do. If a thin film doesn't solve the problem, stop and take another look at it. You may have overlooked something.

Correct diagnosis of malfunctions or squeaks, coupled with the use of the correct lubricant, properly applied, will help you maintain carefree pianos and enhance your reputation as a technician. ■

JACK KREFTING, TECHNICAL EDITOR

THE TUNER-TECHNICIANS FORUM

In our January issue we published a list of piano terms at the beginning of the "Forum," together with definitions of the terms at the end of the column. We promised to try to come up with another list if this feature proved popular with our readers, which it has. Bob Russell politely informed me that I had misspelled the word *caul* (thanks for the correction, Bob, you're right), but nobody said they didn't like the feature, so here's another list:

1. Annual rings
2. Bellyman
3. Book press
4. Cutoff bar
5. Kapsel
6. Scale stick
7. Soundboard island
8. Stepped-out bridge
9. Tender
10. Webbing

How many of the above can you define? Answers appear at the end of the "Forum."

While you are thinking about that, let's move on to a discussion of the logical sequel to last month's main topic.

SOUNDBOARD REFINISHING

Having completed our refastening and shimming last month, we are now ready to scrape and refinish the board. It is not mandatory that the repair be done before the scraping, but I do it in that order because (1) when I scrape, I want all flitches fastened down to the ribs so I don't inadvertently take too much material off a raised area that should be glued down; and (2) since I use Titebond glue for soundboard work, I find I have less trouble with disturbance of the wood fibers around the shim if the old varnish is left on the board during shimming. Titebond is an aliphatic resin (yellow glue) and is said to be far stronger than polyvinyl acetate (white glue) or cold hide glue. Hot animal glue works well in a production shop, but can be inconvenient for occasional use in small quantities. Fiberglass or epoxy resins are not recommended for this work because they are so difficult to dig out if the job has to be redone later for any reason.

Household paint scrapers of the hardware-store variety are not suitable for scraping soundboards, primarily because of their angle of attack. The blade on these scrapers is bent so that it is approximately perpendicular to the work surface. This causes a chattering effect, fine for windowsills but too rough for a soundboard. For fine scraping on soft wood, an entirely different type of scraper is used. Instead of chattering like the paint scraper, the soundboard scraper literally pulls thin curlings of wood with its wire edge (see Figure 1).

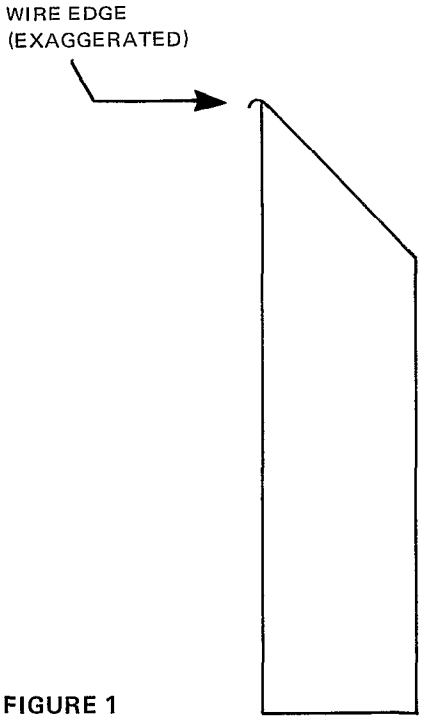


FIGURE 1

Some of the most versatile soundboard scrapers are made from plane irons, available in any hardware store. The iron is sharpened carefully on a fine wheel, with frequent quenchings to protect the edge from excessive heat. If the edge turns brown or purple, it was overheated.

A 30-degree angle works well, although this is not critical. Remember that the sharper the angle, the more wire edge to work with, but also the quicker it will become dull. The wire edge is curled over with a burnisher. A screwdriver blade is too soft, and a drill bit shank is not smooth enough. The finest wire edge can only be made with a burnisher. Two or three strokes across the edge will usually do the job, depending on how much of a curl is desired. For rough scraping, such as removing the old varnish, take only one or two passes with the burnisher and hold the scraper at an angle of about 50 to 70 degrees to the board, leaning it in the direction of the pull cut (see Figure 2). The precise angle depends on the curl of the wire edge, and the craftsman can feel it cutting when the angle is correct. Some downpressure is usually needed in this rough phase, but too much will cause the grain to compress and bubble behind the blade. If this occurs, wood cells are being destroyed by the pressure, and you might as well have used a Red Devil after all.

After the old varnish is removed, sharpen the scrapers again and put more of a curl on the wire edge. We are going to fine scrape the board now, and we want to pull the blade at an angle of around 20 to 30 degrees, depending on the edge. Again, you must adjust the angle until you feel the edge cutting. Very little downpressure is needed this time. You will be pulling paper-thin curls of wood off the surface, and the board will lose some of its amber color and be-

come whiter as the shellac layer is removed. Keep the blade sharp to avoid disturbing the grain. If more downpressure is needed to keep the blade cutting, it is simply losing its edge and should be resharpened.

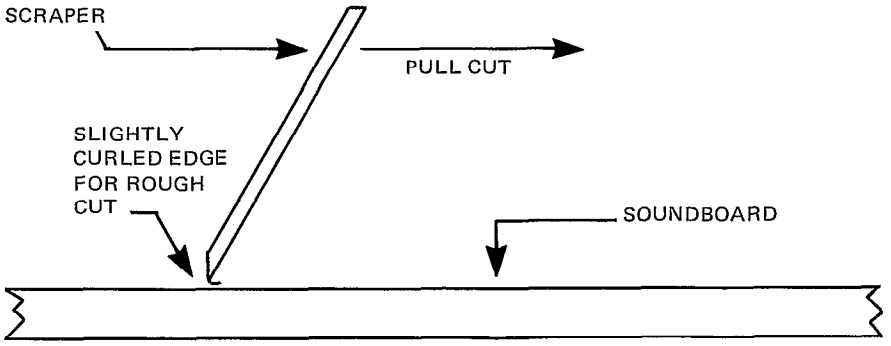


FIGURE 2

By now, we have gone over the entire soundboard twice — once roughly to remove the varnish, and a second time to remove the shellac layer down to white wood. At this point we have two options for the final smoothing of the surface. We can smooth it by sanding, or we can do a very fine scraping with a cabinet scraper. A cabinet scraper is a rectangular piece of the highest quality steel, available at woodworking supply houses. It cuts with a wire edge as the plane iron scraper does, but the wire edge is much finer because all edges are honed perfectly square (see Figure 3). Even the finest grinding wheel is too coarse to properly hone a cabinet scraper, so we must do it by hand on a very fine Arkansas stone. It is imperative that the scraper be held rigidly at a 90-degree angle to the stone while moving it back and forth; otherwise the edge will become slightly rounded and it will be difficult or impossible to produce a usable wire edge.

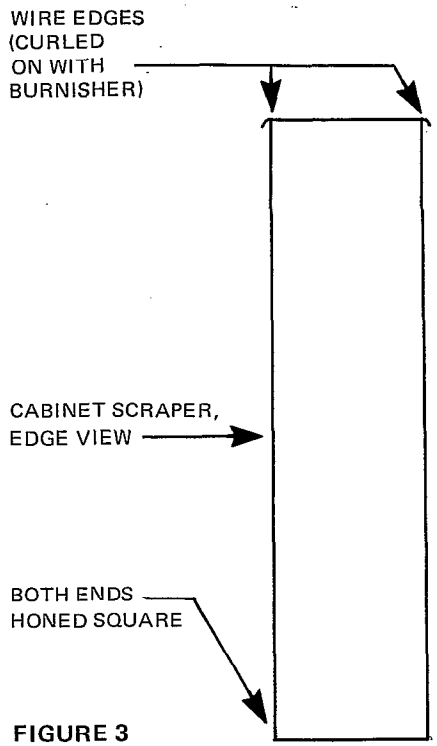


FIGURE 3

With the honing completed, the wire edge can now be rolled. Depending on the amount of curl, the cabinet scraper will usually cut best at an angle of 15 to 20 degrees. A properly honed and curled cabinet scraper will produce curlings of wood so thin as to be virtually transparent. The board is now ready for finishing.

Bridges are much easier to scrape than soundboards, because hardwood is more forgiving than softwood. Almost any kind of scraper will do a good job on a maple bridge, even an ordinary paint scraper. But before we start scraping, let's attend to a few details, mostly of a cosmetic nature. With a brass-bristled suede brush, lightly polish the graphited top surface. Restrain your enthusiasm so as not to rub the graphite off the bridge entirely. If any bare wood shows through, mix a pasty solution of alcohol and graphite and apply it to the area. The alcohol will evaporate quickly, leaving the graphite. Buff lightly to a sheen.

Next, run a file across the tops of the bridge pins until each one shines with bright metal on top. This won't make the piano sound any better, but it adds a nice touch. Vacuum off any metal particles or excess graphite, and begin scraping the notches. Then scrape the sides of the bridges with any suitable scraper.

To get at the undercut areas of the bridge, I use a triangular shavehook. Lacking this, a plane iron scraper will do the job. Try not to score the soundboard at the joint between bridge and board. Lightly sand the sides of the bridges and the top of the bass apron, if any. Now we are ready to apply the finish.

Why finish a soundboard? What are we trying to accomplish? Studies have shown that, unlike the tone enhancement provided by the special varnishes on the violins of Stradivari and Guarneri, piano soundboards sound best with no finish at all. So we finish them only for appearance and resistance to dust and water stains. And even at that, we're only talking about protecting the wood from water that is actually spilled onto it, not moisture in the air. No wood finish can keep moisture out of (or in, for that matter) the wood; so by finishing it we are protecting the surface to some extent, that's all. The notion that the relative hardness of the finish contributes to brilliance of tone or immediacy of response is, in my opinion, specious.

The less finish on the board, the better. We certainly don't want any varnish soaking in, so we shellac it first. After going over the wood with a tack rag, brush on a coat of white shellac, thinned to a 2-pound cut. Allow an hour or so, then rub it down with 320 paper or 0000 steel wool. Vacuum the surface, use the tack rag again, and give it a second coat of shellac. This is better, in my opinion, than one coat of shellac and two coats of varnish. By using two coats of shellac, we will have sealed the board so that only one coat of varnish is needed.

Rub down the second coat of shellac as before, but this time take extra precautions to get all dust particles off the board. Any that are left will emerge as lumps in the varnish, so a little extra care now will pay off later in a smoother finish. When varnishing, I like to start with the bridge notches, being careful not to touch the bridge pins with the brush.

The reason for this is that the heavy-bodied varnish will creep partway up the pin and leave a little fillet of varnish where the pin meets the bridge. This is the terminus of the speaking length, and we must have a solid string-to-bridge contact with no blobs of varnish or anything else in the way. When all notches are varnished, the remaining parts of the bridges are finished next, followed by the board itself.

Flow the varnish on by using smooth strokes from an unvarnished part to a part that is already coated. Varnish dries slowly, so there is no need to rush. Avoid bubbles by doing a minimum of wiping the brush against the edge of the can. Get enough varnish on the brush to allow it to flow, but no more than that. If the brush has to go back and forth over the same area to get coverage, there is not enough varnish on the brush. Conversely, if it appears to pile up at the line where it is flowed into the previously varnished part, then there is too much varnish on the brush. If unsure of your technique, experiment first on a piece of scrap. To avoid dust settling into the varnish, I do this work at night when there is no other activity in the shop.

There are many ways to finish a board, and I don't mean to say that this is the only way, or even the best way, to do it. But from what I know about boards, this is the way I prefer, for whatever it may be worth.

CONTINUOUS HINGES

Question: *. . . I took a set of Steinway grand hardware to a plater a few weeks ago. When he saw the continuous hinge for the lid flap, he said he couldn't plate it that way and pulled all the sections off the rod. I brought the rod back home and was very careful to see that it didn't get bent or harmed in any way. Now the hinge sections are plated, and I had a rough time getting them back on the rod, probably because the plating reduced the inside diameter of the hinge sections. The problem is, they wouldn't line up with the screw holes when the sections were evenly spaced. I didn't get it on upside down, because I tried it that way and the alignment was much worse. I finally spaced the sections and plugged and redrilled the screw holes. My question is, what happened? Could the plater have gotten my parts mixed up with those of another piano? Did I do the right thing? Who is at fault, me or the plater?*

Answer: The screw hole spacing on those hinge sections looks uniform, but actually isn't. If they aren't put back on the rod in the same order as they were originally, the holes will not line up with the lid. One way to avoid the problem next time is to number the sections on the back with a sharp awl or scriber, scratching a number into the metal. This number will be visible even after plating. Remember that the short section always goes on the bass side, and so that's a good point to start with No. 1. There are 11 or 12 sections, as I recall, each of which has two halves. Number both halves, because they will come apart when the rod is removed.

The sections will be reassembled on the rod with relative ease if the rod is perfectly straight, ends slightly rounded, and thinly coated with petroleum jelly. Start with the middle pair of hinge sections, then pull the other pairs on the rod from either end. Be sure all sections are installed right side up, that is, with all the five-tongue sections on top and all the four-tongue sections on the bottom or vice versa, just as it was originally.

If the rod is bent or broken, the easiest solution might be to simply replace it. The old Steinways used a 1/8-inch brass rod, which is readily available at hobby shops, machinists' supply houses, and some hardware stores. Sometime around the turn of the century, the company started using a smaller rod, measuring 0.102 inch, and this size is not so readily available locally since it is about halfway between the standard sizes of 3/32 and 7/64 inch. The manufacturer's parts catalog doesn't list this rod separately, so it might be best to try to straighten the old one if it isn't bent too badly. A steel rod can be substituted, but the technician should be aware that such a substitution could result in a squeaky hinge later.

When making a refinishing bid on a Steinway, the technician should be aware of the fact that different metals were used, depending on the original finish of the metal parts. If they were finished in satin brass, you can offer the client his choice of satin brass, brass plate, or nickel/chromium, whichever he prefers. But if they were plated originally, they will have to be replated because they were not made of solid brass. If you promise satin brass hardware for such an instrument, the only way you can keep that promise is by buying all new brass hardware.

Should you decide to buff your own brass parts with a fine wire wheel, remember to coat them with clear lacquer before installation so they won't tarnish. If enough readers express interest in a discussion of buffing techniques, we will spend some time on that in a future issue.

SUBSTITUTING SHANKS

Richard A. Kingsbury, Steinway technician from Milwaukee, writes:

. . . I would like to lodge a complaint. I am getting rebuilt Steinway grands in the Milwaukee area that have new Pratt Read shanks. The problem with these pianos is that the distance from the center pin to the rosewood core in the barrel is approximately 1/8 inch longer than the standard Steinway shank, making these pianos play like a Mack truck. Please expound about replacing parts with new parts of identical dimensions. These pianos are coming in from out East, a few from a well-known technician.

This letter is reminiscent of the situation that existed three or four years ago, when Steinway shanks were almost unavailable. Rebuilders were converting Renner shanks for use on Steinways by cutting the undersides of the flanges with a special cutting attachment. The cutter, which I believe was made and

distributed by John Roll, had been previously used by those who preferred cloth bushings to the teflon used by S&S on all new shanks.

Dick doesn't say whether Steinway flanges are being used with Pratt Read shanks or not, but that really isn't important. What matters, as Dick points out, is that the very critical dimension from the centerpin to the core has been changed, making it impossible to regulate the action to specifications.

Upon reflection, I decided that the best way to measure this was from the center of the centerpin (that would be the same regardless of pin size) to the front of the rosewood. I measured this distance on an old Steinway shank at 0.585 inch. A new Pratt Read shank measured 0.615 inch, a difference of 0.030 inch, or approximately 1/32 inch. Since this is not nearly as much of a difference as Kingsbury noted, possibly my measurements were inaccurate or maybe there are two different Pratt Read shanks.

At any rate, it makes a difference in the way the action performs. Let's explore some of the compromises that would have to be made in regulating when this dimension is greater than it should be:

1. Since we are lifting the hammershank at a point further from the centerpin, we have increased the mechanical advantage of the key. The touch, then, would be lighter than normal.

2. At the same time, the amount of lift would have decreased. To compensate for this, the touch depth would have to be increased.

3. The jack would be inclined further back in order to line up with the knuckle. In extreme cases, the jack would be at such an angle that it would tend to force its way toward the back of the knuckle because it would no longer be perpendicular to the shank. This would accelerate compression of the jack's stop felt, and that would only allow the jack to dig further yet toward the back of the knuckle.

4. Because of this inclination, there would be greater resistance to letoff. This would be true not only at the knuckle, but to a lesser extent also at the letoff button. The tender would contact the button sooner in the cycle, and rub against it for a longer period of time because the jack would have to move through a greater arc before letoff is complete. The jack would have to right itself from its overcentered position, and still move further to clear the knuckle. If this doesn't sound right, remember that even though the knuckle is the same diameter (theoretically), regardless of where it is placed, the angle of the jack has a profound effect on just how far the jack must move to clear the rounded front half. If the situation were reversed (i.e., the knuckle were too close to the centerpin), we would have problems with getting sufficient power to the hammer because the jack would tend to slip off the knuckle prematurely.

5. Because we had to increase the touch depth to provide sufficient hammer rise, we will have to alter the angle of the backchecks. We may even have to lower them somewhat. The increased key travel also affects damper lift, and increases friction at the whippen support flange center (we increased the arc of movement) and at the capstan. We also have increased the friction in the key bushings by lengthening the stroke, but now I'm getting picky.

6. The repetition springs would have to be weakened because the knuckle would be resting closer to the fulcrum of the lever, which increases its mechanical advantage. It also means that the already delicate compromise between good repetition and reliable checking would become risky. There would be no margin for error in adjusting the springs. Under certain conditions, with decent repetition, the hammers might not check at all.

7. If the jack spring is the type that works in a wooden groove, the angle of the spring might have to be changed to minimize friction.

There are doubtless many other problems that would come up, and I will probably be hearing about them soon from some of you, but the point is that it's little wonder that Kingsbury is complaining. Even after all the regulating compromises have been made (and you can see that one compromise leads to another), the action still does not perform as designed because the basic geometry of the action has been changed.

The easiest way to avoid such difficulties is to use parts that are designed for use in that particular piano, whenever they are available. If substitutions are made, for whatever reason, at least be certain that the critical dimensions are correct. In the case of the hammershank, assuming of course that the drop screw lines up with the repetition lever, the critical dimensions are the distance from the center of the flange screw hole to the centerpin and the distance from the centerpin to the core of the knuckle. Get those right, and that Mack truck will become a racing Ferrari.

HEAVY ACTION

Question: *. . . I need help! It has to do with a Baldwin Model E (no serial number available). It was rebuilt by someone before me and has new shanks and hammers. The owner's complaint is that the action is too heavy to play, which it is. The action parts are free and move easily. My guess is that the hammer heads are not of the proper weight. How can I check this? If they are too heavy, what can be done? Or am I missing something?. . .* — Robert Dommer, Eau Claire, Wisconsin.

Answer: Baldwin model designations do not coincide with scale designations, and I assume we are talking about an E-scale, which I believe is a 5-foot 8-inch piano with a 20 bass. I believe the original hammers on this model were in the 16-pound range, so I doubt that any new set of hammers would be too heavy. In short, I don't think that's the problem.

When action parts are replaced, regardless of the make of piano, there is a certain amount of compression of the felt and leather parts. This compression will throw the action out of regulation after it has been played for

a few hours, regardless of the care taken to regulate it properly when first assembled. It is not uncommon, for instance, to find that the blow distance has increased dramatically even if the whippens were not replaced. In this case, it could be that the knuckles have compressed.

Assuming this to be the case, check the blow distance. It should be no more than 1-7/8 inches. I had a similar experience with a Baldwin D last year. The owner complained that the action was too heavy to play certain passages which required a very quick, light touch. I was astounded to find that there was a measurable downweight of 84 grams! The blow distance had increased to 2 inches or maybe a shade more, thus decreasing the mechanical advantage of the key. I raised the hammerline to a 1-7/8-inch blow, and the downweight suddenly measured 60 grams, about right for that instrument.

The E-scale Baldwin will probably feel right at 55 grams downweight, or at least somewhere in the 50 to 60 range. Check the keys to be sure that no leads have been removed from in front of the balance rail or added behind the balance rail. If lead is found both in front and in back, something is wrong. There is no reason to lead both ends of a key. This merely adds weight to the key, which has a negative effect on repetition because inertia and momentum are increased unnecessarily.

Check the position of the jacks, also. If the jack stop felt is new it may have compressed, allowing the jack to return too far under the knuckle, increasing letoff resistance. The back edge of the jack should line up with the back edge of the wooden core of the knuckle. If it doesn't return far enough, the piano will lack power because the jack will slip out prematurely; if it returns too far, letoff will have to begin too early in the cycle. The resistance added in this manner will feel like extra weight in the action.

When the key is depressed, friction feels like weight, as does spring action. I recommend that all interested readers review Don Galt's comments on this subject in the "Forum" of January 1977. A comparison of upweight and downweight will tell the technician whether the action is really too heavy or merely is too tight.

To sum up: (1) Regulate the action. (2) Check for evidence of any tampering with key leads. (3) Measure upweight versus downweight. If the problem persists after making the above corrections, then one might start measuring the critical dimensions of the action parts, especially those which have just been replaced. It is possible that those new shanks are not Baldwin shanks. Check the measurement from the front of the core to the centerpin, and see how close it comes to 0.625 inch. Also check the distance from the shank centerpin to the whippen support flange center. This distance should be 4-31/64 inches on this model. Check everything, paying particular attention to anything that looks as though it was changed after the piano was built. Any change in the relative positions of critical parts affects the leverage and thus the weight.

REMOVING DOWELED PINBLOCKS

The following letter comes from Hugh J. Manhart, a frequent correspondent from Omaha Nebraska:

There is a time in everyone's life when heaven is upon this earth. Today I removed a pinblock from a Steinway grand in 30 minutes! Can you beat that?

First I must give credit where credit is due. The impetus came from Elmer H. Hunholz of Milwaukee, Wisconsin. Last June, I asked him how he removed pinblocks that were doweled into the case. He suggested that the block be cut in half between the treble and the bass and that, since the block is probably also doweled into the stretcher or front rail, it must be wedged off enough to get a saw in to cut the dowels.

Well, being confronted with a like situation, I timidly started cutting the block between the bass and treble using a power jigsaw at first, and then finishing with a handsaw. Then, I said, what next? How do you wedge off the pinblock? The lights began to flash like flashbulbs, and I got out my three machinist's jacks (the same used to support the block while stringing) and drove a couple of tuning pins into the block.

I wedged the jacks between the front rail and the tuning pins and screwed them as tight as I could, but nothing happened. I then placed a chisel at the glue line between block and stretcher, gave it one solid whack and the block popped loose! From then on, I was on easy street. Using the same procedure, this time with three jacks evenly spaced, I drove in three tuning pins, placed three jacks, and tightened them as much as possible. Using the chisel near the saw cut, I popped the treble end loose.

In 10 more minutes I had it off, flew into my house, and declared a miracle! Total elapsed time, including the time taken to drill out the end dowels, was only 30 minutes. . .

Thanks, Hugh, for this interesting contribution. I don't intend to argue with your procedure, because I think it's a fine one. I would like to just expand a bit on it because there are so many ways to do this job that some technicians in our readership might appreciate more details and other alternative methods.

Some pinblocks, such as the old Chickering and the new Baldwin, are not fastened directly to the case at all. Others are secured to the case by heavy screws, as is the case with Aeolian, Wurlitzer, old Baldwin, and many others. Still other blocks, which thankfully are now obsolete, were mortised into the rim on both ends. The mortised blocks, usually found only in pianos built in the last century, are easily the toughest blocks to remove and replace because part of the rim must be cut out to remove the block. The piano was literally built around the pinblock, and removing it is not unlike carrying a pipe organ out of a church.

Steinway, along with Mason & Hamlin and others, uses a doweled block. There are vertical dowels at either end, plus blind dowels along

the front rail or stretcher. This isn't the most difficult block to remove, but it isn't the easiest either. A certain amount of brute force is sometimes necessary because of the close fit at the ends, even after all dowels are cut; yet one must be cautious in the use of force or the instrument can be damaged.

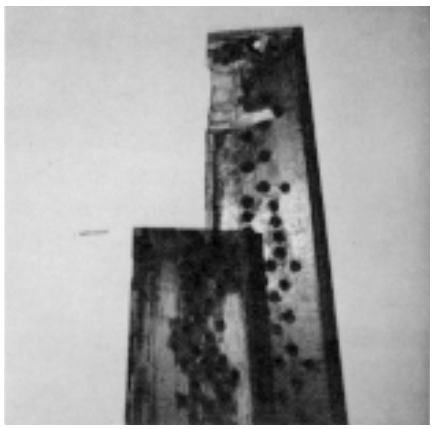
There will be three vertical dowels in the treble end of the Steinway block, plus a flathead screw in the corner on newer, smaller models. The bass end is secured by one vertical dowel in Models S, M, L, O, and A. Above that size, two dowels will be found in the bass end. Since these dowels are visible, it is a simple matter to remove them. Mark and punch the center of each dowel and drill it out. I use a long electrician's 1/2-inch bit for this purpose to keep the drill chuck from marring the rim. These bits are readily available locally in 12- or 18-inch lengths, either of which is fine for this purpose. I like to measure the thickness of the block before drilling out the dowels, so I can stick a piece of masking tape around the drill bit as a depth gauge. We don't want to drill the entire dowel out, only the part that extends above the inner rim into the block.

The blind dowels which extend from the block into the stretcher (front rail) should also be severed to avoid damaging the stretcher when the block is removed. The difficulty here is that they can't be seen. I think they should be called *invisible dowels* rather than *blind dowels* because it is we who cannot see them, not the other way around. Presumably they were so named because they are inserted into *blind holes*, which are holes that don't go all the way through. Anyway, these dowels must be cut.

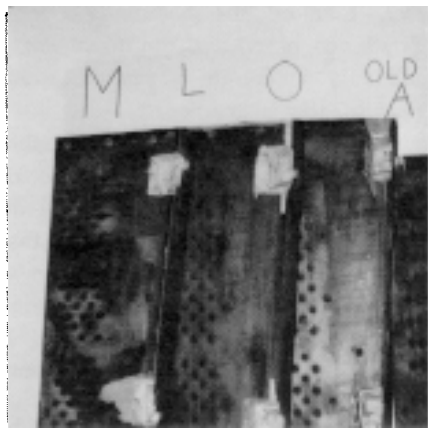
Dowel No. 1 will be found 1-1/2 to 2 inches from the bass end, depending on the model. Dowel No. 3 will be almost exactly in the middle. Dowel No. 5 will be found approximately 1-1/2 to 2-3/4 inches from the treble end, and the second and fourth blind dowels are spaced equidistantly.

Some technicians prefer to saw the block out all along the stretcher, thus eliminating the problem of breaking the block-to-stretcher glue joint and cutting the dowels at the same time. Others prefer to tap chisels into this glue joint, thus forcing the stretcher to bow away from the block. The chisels are left in place while a hack-saw blade is inserted into the crevice to cut the blind dowels. My own favored method is to chisel the dowels out of the block, as can be seen in the accompanying photographs. After the dowels are severed, I break the glue joint with a few judicious blows with hammer and chisel. It could be argued that these blows might not always be accurately termed judicious, but I like to think of them that way anyway. We must remember that the stretcher is not exactly a massive beam, and that it loses much of its stiffness and strength when separated from the hefty support provided by the pinblock. When we drive a wedge or chisel between the two, it isn't the pinblock that moves. Wedging the stretcher out enough to cut the center dowel is easy, but it becomes more difficult to gain sufficient clearance as one moves toward the end dowels, which is one reason I like to chisel them out.

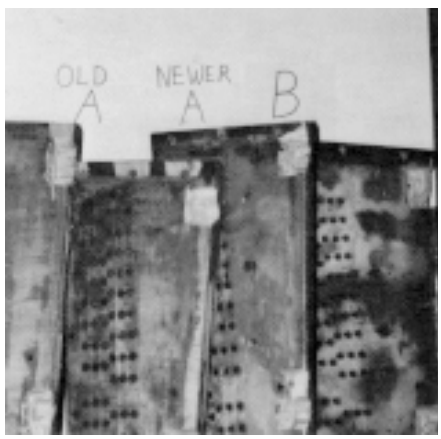
When all dowels have been cut or drilled out and the glue joint to the stretcher has been separated, the technician will find that the block is still very reluctant to part company with the case. The ends are still solidly glued to the outer rim, and the undersides of the ends are still stuck to the inner rim. The technician must now



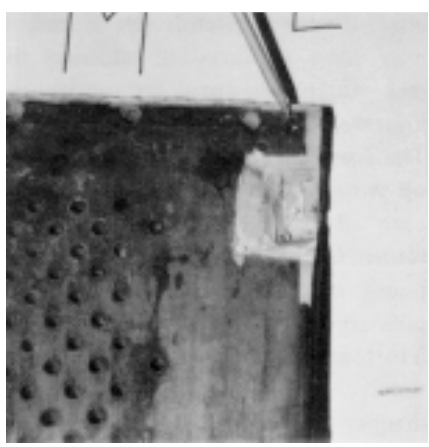
Picture A: Two Steinway blocks, removed from case by alternate methods. Block in foreground was cut in half for ease of removal; the other was removed in one piece for a better template.



Picture B: Treble ends of some Steinway models. Note the chiseled spots, illustrating that the location of the blind dowels is almost identical from one model to the next.



Picture C: More Steinway blocks. All were removed in one piece. Note the shorter length of the old Model A block. This came from an 85-note instrument, thus the shorter length.



Picture D: A closeup shot of the front treble corner of the Model L block. The pointer indicates the countersunk hole for a single wood screw, used in Models S, M, and L.

decide whether or not he wishes to remove the block in one piece.

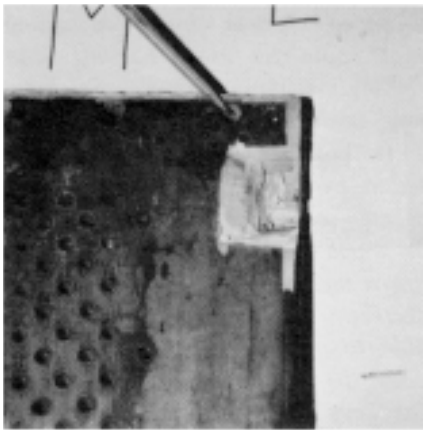
The advantage of removing it in one piece is that it will make a truer pattern for cutting the new block, thus saving time later. The disadvantage of this procedure is that it is more difficult to get it out without causing other damage to the instrument. I like to take them out in one piece, but I do not say that my method is necessarily the best method in every circumstance.

To get it out without cutting it in half, one must jack up one end with a scissors jack or screw jack, placed under the end and pushing against the keybed. Most Steinway blocks will pop out readily this way, but once in awhile a really stubborn one will cause trouble. The glue joint between the keybed and the underside of the rim can let go under extreme pressure from the jack, so if this method is used it is advisable to protect this joint by using bar clamps to hold the keybed to the rim before applying too much pressure to the jack.

If it has been determined, for whatever reason, to remove the block by cutting it in half, those halves must be rejoined to make the pattern or template for the new block. It is best if the entire cut is made by a single saw, so the width of the kerf is uniform for an easier alignment of the halves later. The kerf width can be measured by using the same saw to cut partway into a piece of scrap wood and then measuring the cut with a fine scale. Align the two halves of the block as accurately as possible, allowing for the width of the kerf, and then nail them together with a scrap piece of thin plywood on top of the block, bridging the cut. The more precision achieved in this alignment, the more accurate the template will be.

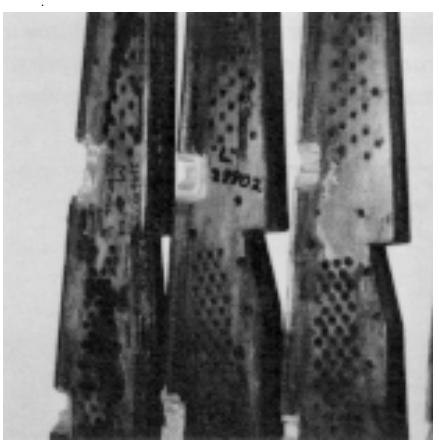
So, as you can see, the decision to cut the block in half simplifies the removal of the block but complicates its replacement; on the other hand, the extra time taken to remove it in one piece is saved later. It amounts to six of one and a half dozen of the other. If you are replacing your first Steinway block, you might be safer to cut it in half, especially if you are not sure whether the vertical dowels have been cleanly severed.

Steinway cases are crossbanded, which means that there are two layers of veneer, running perpendicular to each other. This double layer of veneer is often found on the inside of the stretcher, extending all the way to the bottom, so the block is actually glued to a piece of veneer. That piece is glued to another piece, which in turn is glued to the core stock of the stretcher. The reason I mention this is that the glue joint is almost invariably stronger than the veneer itself, so some of the veneer is bound to adhere to the block when this joint is broken. If the technician intends to blind-dowel the new block into the stretcher, he will have to plane the remains of the old veneer from the lower part of the stretcher to get a good glue joint. There are alternatives to this procedure, but we'll have to discuss them in another issue. Those who do not replace blocks probably feel we have taken too much "Forum" space with this topic already.

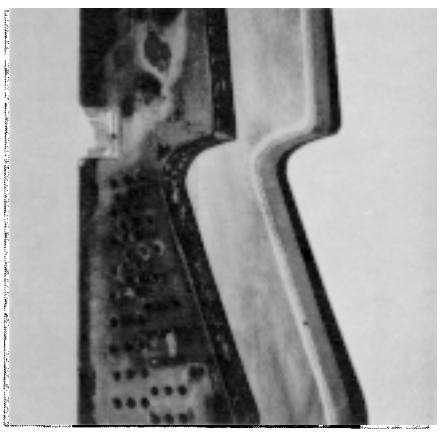


Picture E: Another look at the same block. This time the pointer shows one of the four holes drilled to eliminate vertical dowels. Three of the dowels are in the treble end, one in the bass.

Picture F: Front edges of two more Steinways. Block on left was chiseled out, block on right was sawn out. Both were removed in one piece. Note the dowel locations.



Picture G: Blocks from Models M, L, and O, looking like triplets. Actually, no two are alike, even for the same model. Each must be carefully fitted. Note the lampblack on flange faces, indicating fit.



Picture H: A Model B block and its replacement, which has been rough-cut from outline of old block. Note the chamfer on the top edge of the new block, which is ready to be fitted to the plate.

OPEN QUESTION

Walt Thatcher of Creve Coeur, Missouri, submits the following problem as an open question to our readership, suggesting that the first to solve it be awarded some suitable prize such as an electric shaver without blades. The winner can pick up his prize from Thatcher, who writes:

There is this Steck studio. I use the name so there should be no confusion about the action. The pedal trap is supported on pelican springs, right? When the sustain pedal is stepped on, the upper octave of dampers lift, but none of the others, including the bass.

Push harder on the pedal and the rest of the dampers raise in "falling-domino" fashion. The lifter rod is perfectly straight and all the hangers are lined up straight. The screws in the hinges are tight. The dampers are regulated with the keys so they lift at the proper time as the keys are struck. The spoons and the damper heads are all in a straight line.

My solution worked on the bench. When the rod was raised by hand, all the dampers raised together. Back in the piano, it did not work.

Newsletter Tech Reprints

Ever since the proliferation of chapter newsletters began a few years ago, there has been a general feeling that the better technical articles in these publications should be made available to the general membership through the *Journal*. With that thought in mind, we are considering making this section a regular part of the "Forum" each month. Please let us know what you think of it.

Our first reprint is from the Orange County (California) Chapter's newsletter, and the writer is H. Gene Wilkison, chapter secretary:

The outstanding event of the evening was the lecture on grand regulation by LaRoy Edwards. We have had many programs featuring **how** *to do some technique on a piano, but not so frequently do we have a lecture on* **why** *certain things are done, especially in the field of action regulation. LaRoy, with his unpretentious, gentlemanly manner, introduced to us a "picture" of grand action regulation in the form of a graph of hammer travel versus key movement. He then led us methodically, step-by-step, through each of the regulation variables (key dip, hammer travel, let-off, drop screw position, jack position, repetition lever position, and key height), showing by means of the diagram the effect each of those variables has on the power and repetition of the action. We have been told many times what the "correct" position of each of the regulation variables should be, but seldom has it been explained (never graphically) what effect too much key dip, or excessive key height, has on the power and repetition of the action. With the aid of the diagram, each regulation procedure was analyzed, first to determine the effect of too much, then too little, adjustment on the performance. Through his graphical analysis, we learned why the let-off should be graduated from treble to bass; we learned why a hammer sticking up higher than the others should not necessarily be lined up by adjusting the capstan; we learned why an incorrect key height can make subsequent regulation almost useless. More important, however, we learned how to use his graphical diagram as a tool. It isn't necessary to remember all these points if you can quickly draw the diagram and figure them out! LaRoy's explanation was so logical and straightforward, his word choice and sentence structure so meticulous, that it seemed often that a scholarly textbook was talking. It was truly an evening of illumination — and I had the feeling that LaRoy had merely scratched the surface! Our sincere thanks, LaRoy — please hurry back!!*

Next, from the Western Michigan Chapter newsletter, comes this report of a tech program featuring three factory technicians from the Everett Piano Co. The writer is John Dragone:

An Everett studio piano that had been returned for repairs was used to demonstrate each specialist's techniques.

I. Damper Regulating by Art Bennett — *Mr. Bennett explained that damper regulating is a two-part adjustment. The dampers must first be made to lift as a unit when operating the sustain pedal; then the individual dampers must be made to lift at midpoint of hammer travel when each key is depressed. This is the way all factory damper regulation is done. At first the important thing is to make sure that the individual damper spoons do not interfere with the setting of the dampers. They must be bent out of the way if they do. Then the individual regulation was done easily when the piano keys were removed so the C-shaped damper spoon regulating tool could be used. Facility with finding the spoons with the tool, however, comes only with much practice.*

II. Lost Motion and Key Dip Regulation by Jose' Turanzac — *First all capstan screws are adjusted to remove as much play as possible without preventing the jack from operating correctly. The jack must always be able to get under the hammer butt when the key is slowly released. Then the keys are leveled using a 15-inch ruler and standard punchings on the balance rail pins. If a key is too high a small amount of wood can be planed from the bottom of the key at the balance rail hole. The depth is regulated from a fixed dip of 13/32 inch to slightly more or less so as to achieve a correct feel for each key. Mr. Turanzac maintained that this is more important*

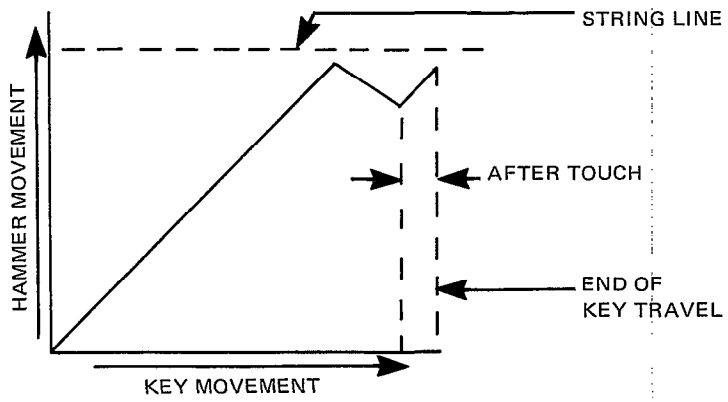


FIGURE 4

for a pianist than an absolutely uniform key dip. Key dip is fine-adjusted by placing paper shims beneath the front keyframe rail where the rail is screwed to the keybed. Because this was essentially a new piano, this regulation demonstration was more of a fine touch-up than the normal procedure that a technician would use on an older piano.

III. Voicing by Richard Collins — *Voicing is done using the conventional voicing tool with two needles, shortened to allow it to be moved around the hammer easily with the action in the piano. A very short emery stick for hammer filing is used for the same reason. The operation was then essentially what all technicians would do with more or less difficulty but was done easily and efficiently by this fine technician.*

In conclusion, this report cannot include the most important thing: This was the actual observation of these specialists working in such a sure and positive manner doing a task that they have done many times. Our guild thanks them for their fine demonstrations.

Finally, here are some thoughts on the subject of glue from the Cleveland Chapter's *Butts & Flanges*. The writer is Mike Knoblock.

There are many types of glue available today for a multiplicity of purposes; and the piano technician might easily find himself in a position where he has a choice of two seemingly suitable, but different, glues for a specific job. We're going to outline here some of the basic types of woodworking glues. Each possesses properties that makes it valuable for certain purposes. Considerations that affect the choice of glue include (1) strength requirements, (2) speed of set, (3) water solubility, and (4) solvent resistance.

Titebond (manufactured by the Franklin Glue Co.), a cream-colored aliphatic glue, is the glue that has perhaps found the most widespread use in our particular profession. It is much stronger than Elmer's Glue, which is a polyvinyl resin emulsion glue. It (Titebond) has a built-in tack for a fast initial grabbing action. A high solids content gives it excellent gap-filling ability, an important property in certain situations. It dries to a hard translucent film resistant to lacquer and varnish solvents. It sands well and cures rapidly with short clamping time.

Polyvinyl resin glue also cures quickly — 20 to 30 minutes at 70 degrees F. It is a white glue that dries transparent and is quite strong. At temperatures below 60 degrees F, the glue turns chalky and strength is impaired. Polyvinyl resin glue is more water-soluble than aliphatic resin glue and can therefore be easily softened with hot water. Both types have a shelf life of six to eight months and then should be replaced.

Hide glue or animal glue made from hooves, bones, sinews, and skin linings of cattle has been the staple adhesive of many trades for hundreds of years. This glue is manufactured in grades of varying strength and comes in sheet, flake, or granular form. Animal glue is prepared by placing the glue in a double-jacket gluepot with enough water to cover and leaving it to soak. When the glue has absorbed as much water as it can hold, the gluepot is heated to a temperature that is not to exceed 140 degrees F. Excessive heat destroys the strength of the glue and repeated heating weakens and thickens it; more water must then be added, further weakening the glue.

The best grades of hide glue are strong and dependable. For optimum results the glue must be freshly made to the right consistency and temperature. Gluing is done quickly in a warm room so that clamps can be applied before the glue jells. Liquid hide glue also comes in ready-to-use form. It has many of the same qualities of hot glue without the elaborate preparations. Setting time is slower, permitting ample time for coating and assembly before clamping.

Animal glues have the advantage of facilitating disassembly of the work should the need arise or for the benefit of future technicians, as is frequently the case in player work (i.e., splitting the stack or "popping off" pneumatics for recovering). The chief drawback of animal glue is that it draws moisture from the atmosphere; exposure to repeated cycles of dampness and drying eventually weakens the glue. In the old days, glue failure was a common cause of frequent repair due to the absence of the more durable modern glues. Hide glue was practically the only type glue available until the synthetic glues began to be developed about 1935 (at about the end of the player era).

Gluing is best accomplished by having both gluing surfaces perfectly smooth. Tests conducted by the U.S. Department of Agriculture's Forest Products Laboratory showed that no benefit derives from intentional roughening of gluing surfaces. In fact, if the gluing surfaces could be smoothed so perfectly that a smooth, even, thin glue line could be produced, no clamping pressure would be required. As a practical matter this almost never occurs, and clamping pressure must be used. Clamps bring the gluing surfaces in close enough contact to produce a thin, uniform glue line and hold them in this position until the glue develops enough strength to hold them together.

Good gluing practice requires application of glue to both surfaces to be glued. If only one surface is covered and makes a spotty transfer of glue to the other surface, a starved joint may result. The glue will penetrate into the wood of each surface leaving insufficient glue for the uniform glue line essential to a good joint.

If surfaces are planed or sanded too soon after gluing with a water-based glue, a sunken joint may result. The water in the glue swells the wood surrounding the glue joint; if the wood is smoothed immediately after gluing, the joint will shrink when the moisture finally leaves.

The common methods of applying glue are with a brush, stick, paddle, or squeeze bottle. Glue from a squeeze bottle should be applied in a zig-zag line. Then the two parts should be pressed together and moved back and forth to produce an even spread. (Before we leave the subject of applicators, we should mention the "handiest" one of all — the index finger. This

is especially true in close work; specifically, covering player pneumatics.)

Generally, tiny beads of glue will appear along a good glue joint at regular intervals of 2 to 3 inches. A starved glue joint may result from using either too little glue or too much pressure. It is a good idea to allow the glue to become tacky by letting it set a short time before assembling. Never apply so much glue that squeeze-out is a problem. Applying excessive pressure after assembly will cause a starved joint since too much glue has been squeezed out. However, there is usually more danger of applying too little pressure than applying too much.

Technical Tips

The following three tips are from Herman O. Koford of Los Angeles:

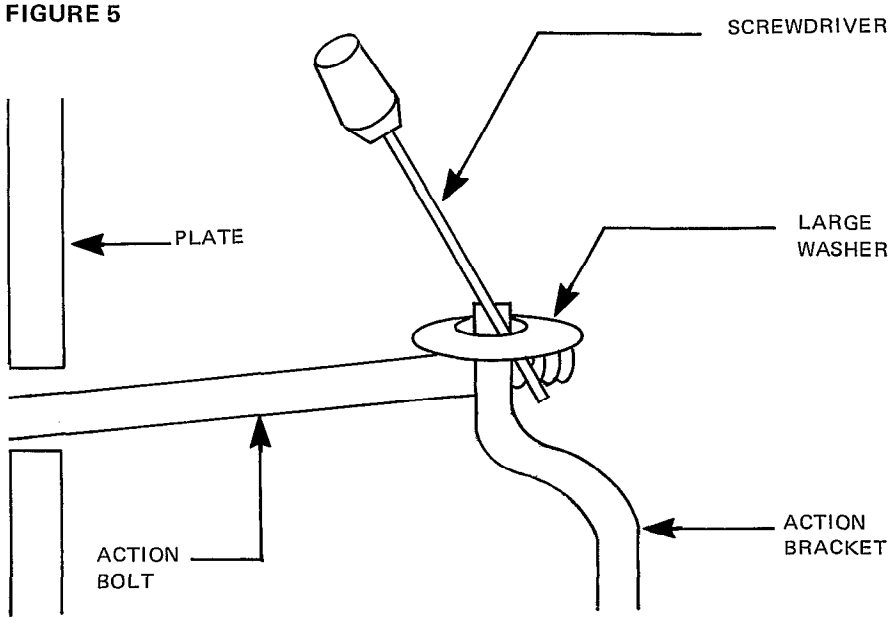
1. If the pedal action is too heavy on a vertical with pelican springs, move the spring outward, away from the pedal. Only two new holes are needed, one in the lever and one in the bottom board. The screw closest to the prop goes back to the other hole, both in the lever and in the bottom. The prop remains in the same place. This gives greater leverage because the fulcrum has been moved. *[Editor's Note: Be sure there is sufficient damper lift for the wedges and trichords to clear the strings.]*

2. On the compact actions, the factory may have the action bolts so tight on the bracket that it is difficult to remove the action. An easy way is to have an iron washer with a 1/2-inch hole. The hole can be filed square. Slip the washer over the bracket top parallel with the bolt (see Figure 5) and insert a screwdriver through the washer at an angle. The screwdriver is pressed against the end of the action bolt and the bracket can easily be pried off. *[Editor's Note: I'm sure Mr. Koford and other experienced technicians won't mind if I add another note for the benefit of newer technicians: Do not pry any one bracket completely off its bolt until all brackets have been eased out somewhat. The action should not be forcibly twisted in the process of removal.]*

3. A common tool for turning the capstan is made with a bend on one end, straight on the other. Put a handle on the straight end. When you insert the bent end in the hole, give it a twist clockwise and it turns the screw a quarter turn up. It makes half as much work. Try it!

Our thanks to Mr. Koford for the above tips, and we sincerely hope that he and others will send us some more! Now here is our tip of the month for April:

FIGURE 5



Tip of the Month

Here's a combination tool which is designed to aid in leveling and dipping the sharps. It's easy to make, too. Simply cut two rabbets (see drawing) in a small block of wood, plastic, etc. The exact overall size of the block doesn't matter, but it could be something like 2-1/2 x 3/4 x 3/4 inch. The important measurements are the height of the rabbets since they do the critical checking of the height of the sharps. Check the leveling with the 1/2-inch side (the sharp should be

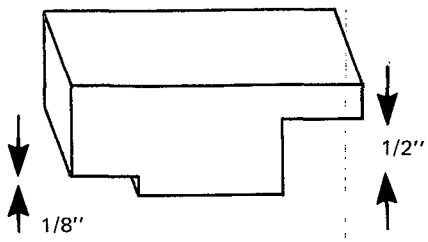


FIGURE 6

1/2-inch side (the sharp should be 1/2 inch above the naturals). The touch can be set with the 1/8-inch side since the sharp should be that height above adjacent naturals when it is depressed. Credit the Baldwin people for this one.

General Shop Tips

The following report of a technical session of the New Jersey Chapter was submitted by Jeffrey J. Seise:

Following the regular business meeting, John Holder presented the technical session called "General Shop Tips." John began his technical by demonstrating his way of properly soaking key bushings so as not to get wet stains on the keys. He does this by soaking wedges of hammer felt in the usual manner, but letting them dry sufficiently to be just damp enough to loosen the glue and yet not leave marks on the wood. The secret is to be sure the hammer felt doesn't touch the wood of the key.

John then demonstrated his "from scratch" jig for grand hammer hang-

ing. A piece of 1/4-inch plywood approximately 6 inches wide and long enough to fit under the entire set of hammers is secured in place by means of a pair of spring-loaded clamps. A straight edge placed either under the hammers up against the tails or up against the outside of the tails is secured in place with screws and a metal bracket. Remove every other hammer and fit new ones on without gluing. Put the action back in the piano and test tone. Adjust as necessary. Never believe the alignment of the old hammers to be perfect.

To ensure up and down position of new hammers, John also has a jig consisting of a block of wood with pins fastened in place the width of the tails and lines drawn on it at precisely a 90-degree angle to the plywood. John also demonstrated his method of shaping, tapering, and roughening the tails up at the same time. Everyone was equally enthralled with John's jig for reaming grand hammers uniformly.

Piano Term Definitions

1. **Annual Rings:** Lines of hard grain in wood. These appear as concentric rings in the cut end of a log, hence their name. In a quartersawn board, they appear as parallel lines, commonly called *grains*. Each hard ring or grain represents one winter season, when the tree has little or no growth. The soft area between rings represents the spring and summer growth of the tree. The wider the soft area, the greater the growth in that particular year, usually influenced by the amount of moisture available during the growing season. Interestingly enough, the tree that had a tougher time and grew at a slower rate produces by far the best wood, because the hard winter grains, or rings, are closer together. We will avoid drawing any philosophical parallels.

2. **Bellyman:** A worker in a piano factory whose job is to make sure that the soundboard, pinblock, and plate are installed so that there is crown on the board, bearing on the bridge, and an absence of tension on the plate. There is some disagreement as to whether he got his name from working with the belly of the instrument or from the belly (crown) of the soundboard.

3. **Book Press:** A clamping jig which holds ribs and bridges fast to the soundboard during the gluing process. One half is recessed to accommodate the ribs, while the other half holds the bridges. After the glue is applied, the soundboard is sandwiched in the middle and the two hinged halves close like a book.

4. **Cutoff Bar:** A stiff wooden framing member which is notched into the rim and bellyrail and glued to the soundboard, usually running parallel to the grain of the soundboard and perpendicular to the ribs. Its purpose is not so much to cut off vibrations from the dead corner of the board, as its name would imply, but rather to limit the amount of cross-grain board area, thus minimizing soundboard cracking. Some cutoff bars are curved to parallel the bridge for purposes of sound reflection. Only a few pianos are now being made with cutoff bars.

5. **Kapsel:** A forked metal hammer-shank pivot, imbedded in the rear portion of the key on a Viennese (backward-striking) grand action.

6. **Scale Stick:** A thin piece of wood about 4 feet long, carefully marked in graduations. Each mark represents the center of a unison at the strike point. If the action does not flare (meaning all shanks are parallel), this same stick can be used to determine the side-to-side position of each capstan screw. Holes for action screws in the rails are also drilled at the intervals indicated on the scale stick. This ensures that the entire grand action train is in alignment with the strike point, from the capstan on up. The difference in spacing from the capstan line to the front of the keyboard is reconciled by flaring the keys.

7. **Soundboard Island:** The area in the middle of the board that is not thinned. So named because of its wavy and seemingly random shape, in reality it is carefully planned in shape to provide the optimum compromise between strength and flexibility. Careful thinning of the top side of the board has been shown to markedly improve tonal response, especially around the top of the treble bridge.

8. **Stepped-Out Bridge:** A bridge which has been partially relieved on the underside so that it does not make contact with the soundboard along its entire length. Stepped-out sections are usually seen in the middle and tenor sections of treble bridges. This type of construction is intended to aid flexibility.

9. **Tender:** The arm of the jack that projects forward horizontally from the centerpin. The tender's function is to trip the jack, and its relative length determines the arc and speed of jack movement; the shorter the tender in relation to the main arm, the greater the arc and speed, all other things being equal. Increased arc and speed carry the dual penalty of a touchy letoff adjustment and increased letoff resistance, so once again the designer must compromise.

10. **Webbing:** The flat area of the plate that surrounds the tuning pin holes. In the case of the instrument with an open block, there would be no webbing.

In closing this month's "Forum," I want to appeal to our readership for more technical material. Everyone can help. Those with limited experience can send in questions, and those with more experience can send in technical articles and tips.

If you would like to write an article but feel you lack writing skills, send me your notes or a rough outline. I'll be more than happy to help you with it, and I'll send a copy to you for your approval before publication. If you have specialized knowledge, we all want you to share it with us. That sharing is, after all, in the true spirit of our Guild. ■

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

Travis Piano Service

TWO GREAT BOOKS

"Let's Tune Up"

Paperback	$15.50
Hard cover	17.50

"A Guide to Restringing"

Paperback	$ 9.95
Hard cover	12.50

Thousands of these two books have been marketed to piano technicians; public, college and university libraries; bookstores; jobbers, and dealers throughout the world. If you have not purchased your copies, why not send for them today? The coupon below is worth $2.50 when accompanied by your check or money order. I pay postage.

$2.50 $2.50

This coupon valued at $2.50 when accompanied by your check or money order. Send to:

John Travis
PO Box 4359 Tacoma Park, MD 20012
Telephone Answering Service (301) 439-4111

$2.50 $2.50

TRY OUR STRINGS AND HEAR THE DIFFERENCE

Our base strings are now preferred by a fast-growing number of technicians.

They are finding our strings bright and without false beats, with a long-lasting tone and the correct harmonic structure. We use a hard extra-bright core wire and 100 percent bear solid copper windings.

Our strings are made within five business days and shipped to you registered mail. If any one of our strings is defective, call us collect and we will replace it promptly at our expense.

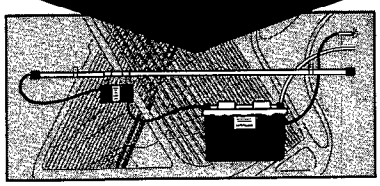
We wind strings from concert grands down to spinets, squares, historical instruments, and open wound strings. We rescale or copy original scales according to our customer's wishes. For any Steinway grand model, just phone us at: **(416) 226-1171.** Send samples or paper patterns by registered air mail or by UPS. Our mailing address is: **A. Issaac Pianos; P.O. Box 218; Station A; Willowdale, ONT, Canada M2N5P0.** Our UPS Address is: **A. Issaac Pianos; c/o Able Custom/Brokers; P.O. Box 787; Station A; Toronto ONT, Canada M5W1A0.**

Stated value on parcels of samples should never exceed $2 to avoid parcel being held up in customs.

A. Issaac Pianos

Let us help you
EARN
$50 TO $70
from every piano owner in your files

INSTALL
the complete
DAMPP-CHASER®
IN PIANO **DUAL AUTOMATIC HUMIDITY CONTROL SYSTEM™**



Who knows better than you, the professional tuner/technician, what Dampness and Dry Heat can do to a piano. That Dampness can cause sticking keys, rusty strings and pins and sluggish action. In winter, how Dry Heat in heated areas can cause rattling keys, slipping pins and even cracked soundboards, and as you know, tuning instability is caused by **both** conditions.

Now, Dampp-Chaser's Humidity Control System comes to the rescue! It guards pianos and your good work, safety and silently against **both** Dampness and Dry Heat automatically by establishing and maintaining normal humidity within all pianos 365 days a year.

Recommending and installing the Dampp-Chaser System will create satisfied customers, plus bringing you more customers. The cost to piano owners for a lifetime investment, including your installation, would be around $125 (upright) or $150 (Grand). Proven in over ONE MILLION installations worldwide since 1947.

GET STARTED NOW

Write for information and **FREE** samples of the Dampp-Chaser Business Building Aids.

OVER 30 YEARS OF MANUFACTURING BY:
DAMPP-CHASER®
ELECTRONICS, INC.
P.O. Box 1610 PTJ
HENDERSONVILLE, N.C. 28739

978-1

NEWTON J. HUNT

ACCENT ON TUNING

When it comes to talking and writing about tuning, we all prefer to speak about the better pianos and how to get super-fine tunings on them. But there is a whole group of pianos out there which are not so tunable because they are not the fine pianos we would all like them to be; they are, nonetheless, pianos that must be tuned because they bring to the owners all that music means to them.

Tuning problems appear to fall into five general categories: mechanical, false beats, anomalous scales, bad scales, and age — all of which overlap considerably.

MECHANICAL PROBLEMS

First I would like to dispense with tuning problems that are caused by loose tuning pins, bad pinblocks, split bridges, broken strings, cracked plates, and deteriorated soundboards. These and many other problems are easy for me to handle because their solutions belong to the "Forum" and buck-passing is delightfully easy.

FALSE BEATS

False beats have been bandied about for years and I personally think that not all the answers are in yet. What we do know is that they are caused by loose bridge pins, loose agraffes, and improperly notched bridges. Strings that have been tuned to the elastic limit can develop falseness because, as the string elongates, it usually does not do so evenly and an irregularly shaped string cannot produce a pure tone. This is generally more obvious with wrapped strings.

In tuning faulty bass strings it becomes a matter of finding the least objectionable point to leave off. This is true for the octave as well as the unison. In some cases the beat in a unison is so slow at the lower partials, and the uppers are so loud, that it works out best to tune to the uppers and put up with the pulses of the lowers. There are unisons where just the opposite is true. Each must be judged individually and tuned accordingly. The same is true of single bass strings that have a beat of their own.

We all have had the customer who goes over to the piano that has just been tuned and plays C_1 hard, then says it is "out of tune" with itself. The customer may be hearing the tone and not the tune, or may be hearing a quality that we generally ignore. Whatever, try to find out and explain the situation in nontechnical terms.

In the middle section, falseness can make it extremely difficult to tune a temperament. This is why I have laid such stress on the tests for fifths and fourths. They are the only means of judging the relative tempering of some intervals. (Please refer to my articles in the November and December 1978 issues of the *Journal*.)

False beats in the treble are generally the ones that make "looney tooners" of us all at times. Quite often the right strings are less false than the left because the left bridge pins have the least amount of wood for support against the side bearing.

When falseness becomes a deterrent to tuning accuracy, try each string in turn to find the least false. Then memorize the speed of that beat and compare it to the beat(s) in the single, double, and triple octaves. While tuning by extremely small changes, concentrate on the beat that changes and aim for purifying that changing beat. Using all this information, an acceptable synthesis should be possible. With severely false strings, it is usually advantageous to tune all three strings of a unison as octaves, select the best-sounding octave, and double-check the other strings as unisons. This may have to be done two or even three times before you are sure and secure, but the best possible tuning is always worth a small extra investment.

In the very high treble, using your fingernail or a plastic, ivory, or wooden plectra will help clarify octaves and especially unisons. I know this has been said before, but it bears repeating. I sometimes find myself struggling to hear something using the key when my fingernail would work much better.

ANOMALOUS SCALES

Pianos with scales inconsistent with what would naturally be expected can be a problem to tune initially. I say initially because, with a little knowledge and practice, it is possible to adapt to a particular tuning situation. There are several consistently scaled and beautiful instruments, some with very low inharmonicity and others with very high inharmonicity.

Pianos with low inharmonicity generally tune with very smooth octaves and thirds that change beat rate quite gradually. They tend to sound mellow and warm and are wonderfully intimate instruments marvelously suited for solo performance or for accompanying a single artist or small ensemble of artists. Pianos with high inharmonicity tune with somewhat busy octaves; the thirds tend to change rather rapidly. They have a strong penetrating quality that enhances their ability to balance well with large orchestras, as well as being striking soloists.

To illustrate my point, I will use an extreme example of the opposite type. The other day I was tuning (and having trouble with) a small cheap spinet, despite the fact that I had

tuned this piano three times since September 1977. My problem was that I could not get the temperament to work out right. After working with it for about 10 minutes, I finally relaxed the "rules of tempering" and discovered that a really fine temperament was possible if I permitted the thirds to have a beat rate of about half normal. It worked out beautifully — middle, bass, and treble. The point is that you must use the conjunct thirds as the only means of evaluation in some cases. (See the December 1978 issue of the *Journal*, page 21.)

All these pianos are anomalous in that they place extra demands upon us because of their excellence (or lack thereof), or because they do not tune in a "normal" or average fashion.

BAD SCALES

There is another anomalous scale and that is the untunable one. This is the badly engineered scale or the poorly fabricated piano which presents itself as uncooperative, inconsistent, and frustratingly untunable. I have in mind two pianos — a known-name console about 12 years old and a no-name spinet of about the same age. These two pianos were impossible to tune because there was no way to tune an equal tempered scale with fourths and fifths with consistent beat rates and with thirds and sixths acceptably reasonable. I shifted upward and tuned a C_4-C_5 bearing and gave little value to thirds and sixths. By moving up I got out of the area where inharmonicity is generally the least consistent. The only solution to a piano of this type is to rescale and restring it. The prime consideration then is the relative merit of doing so — the cost and return ratio.

AGE

The age of a piano can have a considerable effect on its tunability. If it is very old and badly worn it can have so many problems that it is not worth investing the minor time required for even a tuning, but needs major rebuilding. We have all seen pianos like this; the hardest part is telling the customer that nothing can be done about the instrument short of a major investment.

There is another age classification — the new pianos that are untunable. With the millions of man-hours of experience in piano-making available, as well as new advances in scale mathematics, material, technology, and production methods, there appears to be no justification for making these untunables. In many cases rescaling is not worth considering.

There are many kinds of tuning problems but, as can be seen, there are solutions. The best technique available to us is adaptability — to meet the challenge of each instrument and to do the very best we can with what we have to work with. One needs to stop, think, ask around, and try different approaches until. . . bingo! So, happy solutioning! ■

PRISCILLA AND JOEL RAPPAPORT

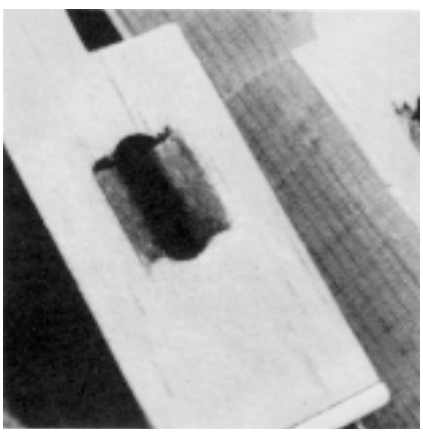
VON DER WERKSTATT

When Jack Krefting asked us to do some writing for the *Journal*, we were hard-pressed to think of an angle that had not been already covered in the many excellent articles printed over the years. There have been lots of contributions on new products and new procedures. Jack pointed out that one of the big advantages of PTG is a periodic review of what we are already doing. Those who may be new to the profession will get a chance to begin their work on a solid foundation, and those who are experienced can benefit from a review of the basic concepts.

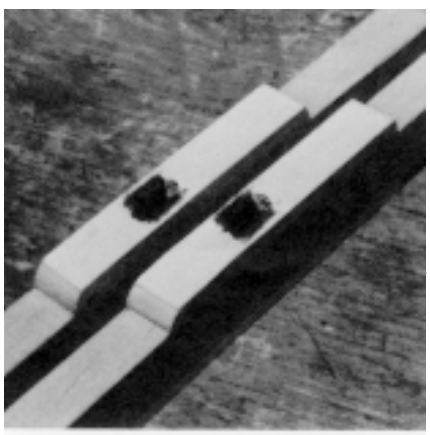
We will call our column "Von der Werkstatt," which means "From the Workshop" in German. Discussions of procedures or repair will be done from the shop point of view, and will probably not be suitable for quick "on-the-job" repairs done in the customer's home. We hope that you will enjoy this new format. Feel free to suggest topics, but remember that exotic or "just to get through the concert" repairs (which have their rightful place) are not what we will discuss here. What is basically right in piano building is the theme.

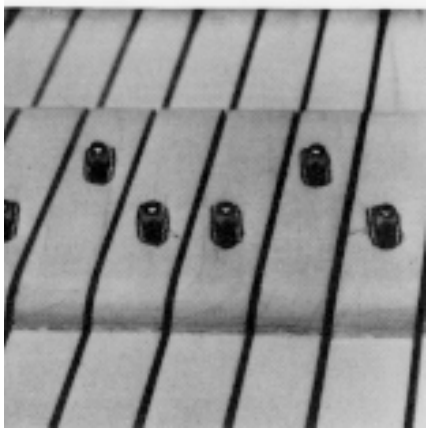
It is important to understand the part your work plays in respect to the future of the instrument as well as how your work affects the next technician. Repair should have some careful though behind it: (1) Is the basic material from which the piano is made altered? (2) Is wood belonging to an integral mechanism being destroyed? (Some action parts are not easily replaced.) (3) Is the quality of the instrument being maintained or improved? We all agree that shortcuts can sometimes be successfully used when done by the skilled technician who exercises good judgment based upon his experience. However, without solid basics, the results of the inexperienced technician using shortcuts can prove to be disastrous to the instrument.

Both the center and front rail pins play an important part in positioning the key and guiding the key in its motion. The center rail pin positions the key right and left, forward and back. The front rail pin establishes the key spacing. The bushings in both



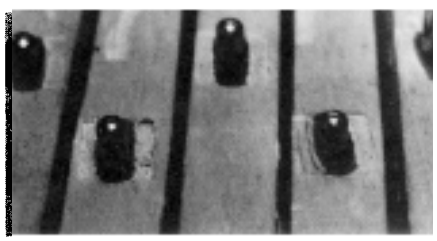
Picture 1: Good example of front rail bushing. Felt or bushing cloth is the correct thickness and does not extend beyond the flat surface of the bottom of key. Bushing cloth should extend about 3 mm into the opening of the key. Recommend using hot hide glue for bushing. Can be easily steamed out in the future.

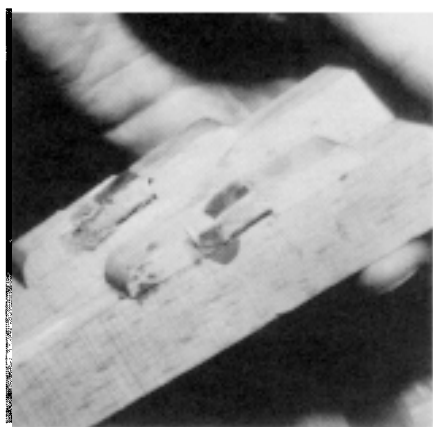




Picture 2: Good center rail bushing; same guidelines as described in Picture 1.

Picture 3: Good example of center rail bushing. Cloth extends into button about 3 mm and is cut evenly with the top of the button.





Picture 4: Bushing tightener tool.

Picture 5: Example of "tightening" bushing with tool.

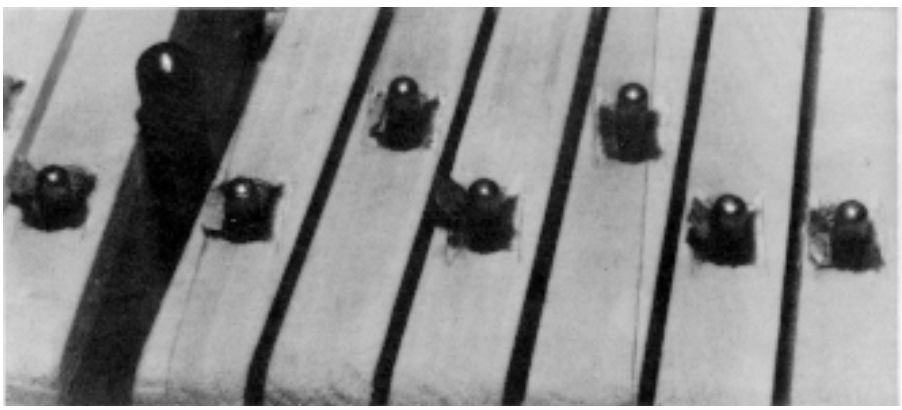
Picture 6: Deterioration of wood and subsequent repair to key button after it was whacked by the tool.

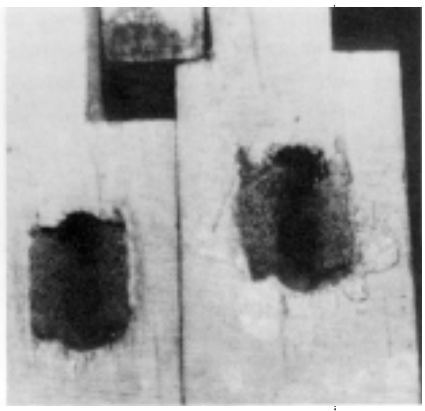
places line the openings; their purpose is to suppress noise and provide necessary support. The bushings in the key should be eased properly to allow the key to move freely. If the bushings are too tight, the key will act sluggish or just plain stick. On the other hand, if the key bushings are worn or eaten by moths, the key will feel very loose or wiggle excessively from side to side.

A tool commonly called a "bushing tightener" is often used when keys wiggle excessively to the right and left on their pins. This tool, when tapped, sinks into the bushing and wood, forcing the wood supporting the bushing to compress inward, giving the illusion that the "bushing" has been tightened. This tool is often used as a fast and easy way to "tighten up" bushings. Therein lies the problem: indiscriminant or overenthusiastic use of this tool can ruin piano keys and make them virtually impossible for the next person to rebush — and that next person might be you. So be careful!

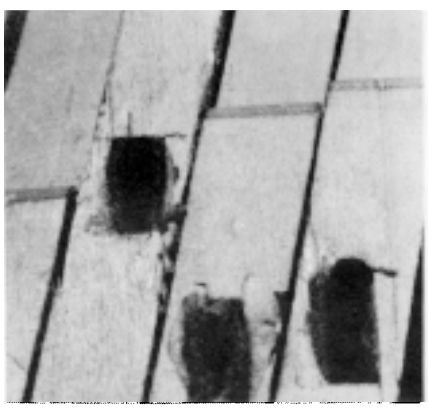
Perhaps the best course is to take the time and properly rebush the set of keys. Check the center rail pins for burrs which will cause the bushing cloth to wear out quickly. The front rail pins should be straight and free of sharp nicks. The edge of a turned front rail pin acts like a cutting edge, causing the bushing to wear out faster. The large flat side of the front rail pin provides more surface for contact with the bushing cloth, greatly decreasing eventual wear of the bushing. Each technician must use her or his own professional judgment of what is best for the instrument, given a certain situation. A job well done restores the instrument to its near-original condition and ensures your reputation. Nobody wants to receive callbacks for a temporary make-do job. In the end, it is cheaper to do the job right the first time.

The pictures illustrate some of the points made in the discussion. ■

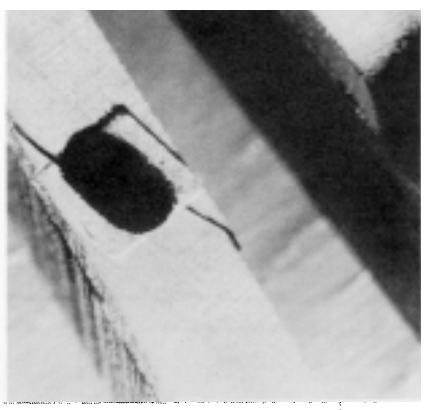




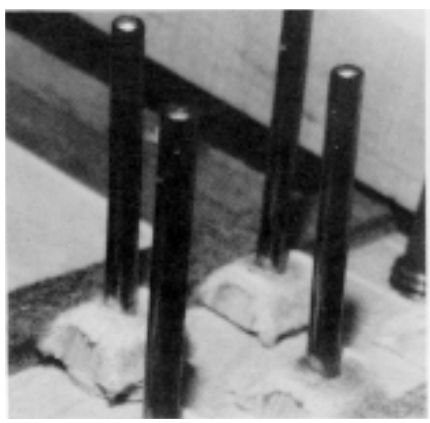
Picture 7: Shows use of paper glued to existing bushing. Bushing is again too loose (not recommended).



Picture 8: Bushing cloth too thick. Graphite grease on the front rail pins was used to help reduce friction (not recommended).



Picture 9: Poorly rebushed keys. Felt too thick. Beads of glue and contact cement ooze out above surface of button and between keys where button was cracked. These keys are practically impossible to rebush.



Picture 10: Damaged key button shown without bushing. Indiscriminant use of bushing tightener can split the button, causing key to wobble more than before.

Picture 11: Burrs on left side of center rail pins. Burred pins can be replaced, pulled out and put in upside down, or pulled out and put in again so that the bushing has no contact with the burred surface.

Picture 12: Center rail pin smoothed with sandpaper. Adds undesired friction. Bushing is likely to wear out quickly. Pin must be replaced.

DENNIS KURK

CONVENTION '79

It is with a great deal of pride that I introduce the members of the faculty for the 1979 Technical Institute. The depth of experience that is represented here is truly impressive and the brief biographical sketches presented just barely begin to tell the story of the enormous amount of talent that will be available to you at the Minneapolis Convention. PTG can be very proud to have people of such high caliber as representative of the educational endeavors of our organization.

Carl Wicksell — Carl served as southeast regional vice president in 1974 and, in addition to teaching classes on tuning at the last two national conventions, was also instructor in private tuning tutoring for five years. He has his own shop, teaches piano tuning and repair privately, and is also a dealer for the Charles R. Walter piano. Helpmates are his son Larry and wife Gladys.

Priscilla and Joel Rappaport — Both Priscilla and Joel Rappaport have built a piano from scratch as part of earning their Master Diploma from the Handwerkskammer in Stuttgart, Germany. They have worked in the Bosendorfer, Bechstein, and Pfeiffer factories and are graduates of the Meisterschule fur Klavierbauer. Current activities include extensive piano rebuilding work, concert tunings, and teaching programs. Priscilla and Joel operate Rappaport's Piano Workshop in Austin, Texas, where they are also the staff technicians for the University of Texas.

Stanley Palm — Stan served as a tuner for the Army Band while on duty in North Africa and Europe during the war and has been a member of PTG since 1958. Since 1971 he has taught the piano technology course at The MacPhail Center in Minneapolis. He plays the string bass professionally, and this will be his first year teaching at the national level.

Bill Stegeman — Of anyone, certainly Bill Stegeman can be considered a master of his art. A music director for 12 years, he joined PTG in 1948 and has been in our profession for 43 years. Bill is the creator of the educational recordings entitled *The Marvelous Building Blocks of Music*, which explain music intonation and harmony. These recordings are used by colleges nationally and internationally. To teach this subject he originated the Johnson Intonation Trainer and also has written articles for a number of music magazines. Bill has taught at national conventions for about 20 years.

Charles "Bud" S. Corey — Starting as a piano stringer, Bud Corey has worked for The Wurlitzer Company for 33 years and is now works manager of the Holly Springs Division. He has been a Craftsman member of PTG since its founding, as well as having been a member of both NAPT and ASPT. The stringing class Bud teaches has been presented twice before, and Bud has attended and taught a class at every national convention except one since PTG was formed.

Willis Snyder — Willis is another stalwart of PTG, having been a member for 21 years. He has been active as an instructor on the local level for 12 years and on the national level for 8 years. For 25 years Willis has owned a family piano service business and remanufacturing company and has been a field service consultant to manufacturers for 5 years. His special class on bridge building is one of the most popular at the Institute, and he can even build a soundboard from raw lumber.

Dave Roberts — One of our most scholarly instructors, Dave has both a BS and MS in physics. For eight years he worked in the solid-state acoustics industry while doing piano tuning and rebuilding part time. In 1975 he joined PTG as a Craftsman member, but is still an officer of an electro-optic-crystal manufacturing firm which he helped found in 1973. Dave's teaching experience includes four years at Case Institute of Technology where he taught undergraduate physics, and he has taught for PTG on both the national and regional levels. To round off his many accomplishments, he plays both piano and oboe.

Francis Mehaffey — One amongst many of our staunch Craftsman members, Francis has been with PTG for 14 years. He has been displaying and explaining tools at our PTG conventions for 12 years and has developed several new ones never before shown. We can see all of these, in addition to some new electronic tools developed by his son, at our Institute this year. Francis plays the violin as a hobby.

Richard Elrod — Richard has a wealth of experience from his 22 years with the Aeolian Piano Corporation where he worked at stringing, back manufacturing, action regulating, voicing hammers, and tuning. Richard has spent 10 years in player manufacturing and service and will be able to answer all of your questions on the Aeolian players. This will be his third year with us at the Institute.

John Ford — Genial John Ford joined PTG about 1963 and has taught various classes on both the local and national levels since 1965. He owns and operates Ford Piano Supply, of course, but has also manufactured pianos (the Mathushek). He still sells, rebuilds, and services pianos, as well as continuing to design and invent new tools for our trade. John is also a cello player.

Lew Herwig — Lew Herwig's technological background is extensive and covers associations with John Hens, Charles Frederick Stein, Steinway & Sons, Everett and Baldwin piano companies, Pratt Read, and Pacific Piano Supply. His piano-servicing areas have included three major television and radio networks and the best-

known motion picture studios. Lew's current association with The Wurlitzer Company dates from 1973 and, along with the engineering and mechanics of new piano designs, he is responsible for the development of the sustenuto for the Wurlitzer upright. Lew is a Charter member of PTG and has held many PTG positions. He has taught in Institute classes for over 20 years and, as we all know, is also a great guitar player.

Wendell Eaton — Another of our Charter members, Wendell has taught innumerable times at our conventions on a variety of subjects attesting to his great capabilities and expertise. He has operated his own rebuilding shop since 1951, and prior to that was shop foreman for the Campbell Music Company (Steinway dealers). Wendell's current association with Dampp-Chaser, Inc., began in 1975, and he continues to explore and research the extremely important subject of humidity control as related to pianos.

Ernie Juhn — It would seem that one stint as Institute director would be enough for most anyone, but Ernie tackled the job twice (Denver 1970, Cleveland 1971). He has also taught at conventions since 1969. Ernie has worked in our profession since 1939 and joined PTG in 1965. As well as being in films (the new one on dampers), Ernie has traveled extensively for Yamaha working as a technical service consultant.

Owen Jorgensen — Own is most famous for his book, *Tuning the Historical Temperament by Ear*, which gives instructions on setting 51 different temperaments. He has performed at piano concerts around the country since 1967, demonstrating these systems. A Craftsman member since 1957, Owen has been the technician for the Music Department of Michigan State University since 1960 and is currently heading the study program there which leads to a bachelor of music degree in piano technology. A critic has, very aptly I think, described Owen as "a kind of piano tuner raised to the rare level of scientist, scholar, and tasteful musician."

Cliff Andersen — Since 1935, Cliff Andersen has held a number of positions with The Wurlitzer Company, including chief engineer for the DeKalb Division and manager of corporate engineering. Currently he is manager of product assurance. He has been attending technicians' meetings since 1949 and has taught vertical service and regulation on all levels for many years.

Robert Hill — Bob has been with The Wurlitzer Company for 20 years and is chief engineer for the Holly Springs plant. He has been attending national and state meetings doing classes on vertical regulation ever since he started with the company.

Larry Talbot — Larry has been with The Wurlitzer Company since 1962 and has attended many national conventions, participating in the vertical regulation classes. When you call Wurlitzer at DeKalb, Illinois, on a piano service problem, Larry is the person you are talking to.

Allen Foote — As an electronics engineer Allen saw the need for, invented, and developed his first humidity control device — the Dampp-Chaser — in 1947, the founding year of his company. Many other innovations for moisture control are firsts for him, not only for pianos, but in many other fields. His product is known worldwide and is currently listed by over 25 distributors. Allen is an amateur radio operator, has taught electronics, and supervised installation of radar equipment during the war. He has been instructing technicians on the use of his products at national conventions for many years.

Lee Jedlicka — Oslund key recovering equipment is very well known to piano technicians. After Lee had worked for Mr. Oslund for a short period, he purchased the company from him in March 1968. For 10 years classes on key recovering were taught by Lee and he continues to manufacture and sell the Oslund products.

LaRoy Edwards — LaRoy is a Charter member of PTG. He taught at the first convention in 1955 (ASPT) and is past president of the Los Angeles and Pomona Valley chapters. The Man-of-Note Award was presented to LaRoy in 1974. He has been employed by Yamaha since 1969.

Jack Caskey — Another Charter member of PTG, Jack is past president of the Seattle Chapter and received the Man-of-Note Award in 1977. He has been employed by Yamaha since 1973.

Kenzo Utsunomiya — Kenzo has been a member of our organization since 1971 and is a member of the International Committee of PTG. While in Japan he was dean of the Yamaha Institute of Piano Technology and a member of the Concert Technicians Corps. He has been employed by Yamaha since 1961.

Steve Fairchild — Very well known for his "speed" tuning, Steve's record time of 13 minutes 28 seconds for pitch raising one-half tone and tuning is listed in the 1979 edition of the *Guinness Book of World Records*. The Fairchilds are four generations of piano builders and technicians spanning more than 75 years in the business. Steve is a 20-year Craftsman member of PTG and is the inventor of the Fairchild Grand Hammer Installer and the Hale Speed Tuning Hammer. He also designed the Fairchild Digital Tuning System, which converts aural tuning into visual terms, and has been a PTG Institute instructor for 13 years.

Fred Drasche — A real "veteran" when we speak of piano technicians, Fred Drasche has worked for Steinway & Sons for 56 years. He has been a member of PTG for 12 years and has taught in all of those years at the various national and regional conventions. His experiences in the field of piano work could easily fill a book.

Ed Fesler — Ed has been a PTG member for 15 years and is currently editor of the Twin Cities newsletter. He has taken university and vo-tech courses in computer software and hardware and is a charter member of the Minnesota Computer Society.

Del Simcox — Del is the manager of a local store for Radio Shack, the largest manufacturer of microcomputers. He has an EE degree and specializes in computers.

John Bloch — John is a graduate of Oklahoma State University. He

assisted in the work at the national convention in Denver (1970) and has instructed on many subjects at all levels of PTG gatherings. John owns and operates Denver Piano Rebuilders and is well known for his popular and well-written column in the *Journal*, "Chips Off the Old Bloch."

Dick Flegle — As president of the Twin Cities Chapter, Dick Flegle has been an outstanding leader. He started his tuning career in 1950 and is a Charter member of this chapter, which was founded in 1964. He has a college degree with a major in trumpet and taught for 10 years at the college level. Dick instructed at our regional seminar held in 1974.

Harold Rhodes — Harold Rhodes built his first electric piano out of old airplane parts during the war, but it wasn't until 1965 that he joined CBS and began serious development of his unique instrument. Many manufacturing difficulties have been overcome in the process and Harold continues to plan even newer concepts for his product.

Ned Dodson — While working for such companies as Steinway and Baldwin, Ned gained a great deal of experience in his over 25 years in our profession. Ned maintains the pianos at the Kennedy Center Concert Hall in Washington DC, is a percussionist, and has taught at many technical seminars.

Raye McCall — Beginning in 1967 with a piano technology course at Los Angeles Trade-Tech, Raye McCall started his own business that year. He carries new and used pianos for sale and rent, and also does refinishing and restoring of players and reed organs. Raye is a distributor for a line of glues and epoxies and has taught classes from local to national on a number of different subjects over the years.

Walter Pearson — His formal training has been in the field of audio-acoustical engineering, but Walter has operated piano rebuilding shops for 29 years — 15 of those in Canada and 14 in Florida. He was an instructor in the Canadian Army and has studied factory and shop methods in England and Germany.

Norman Heischober — Another scholarly member of our group, Norman holds both a BA and MA. He has been in our profession for 18 years and works mostly in restoring player pianos and nickelodeons. Norman is past president of the Long Island Nassau Chapter and has taught at a number of PTG meetings in the past. In addition to counseling work in psychotherapy, he is very active in civic and environmental affairs.

Jack Krefting — Jack is doing a superb job as our new technical editor of the *Journal* and we are proud to say that his origin is right here in Minneapolis. He started his career by taking a correspondence course in tuning and has been full time in our profession since 1970. He taught high school music in California for five years after majoring in French horn and voice at San Diego State University. This will be his second year teaching at the national level.

Albert Sanderson — Best known for his invention, the Hale Sight-O-Tuner, Al Sanderson has been working on pianos for over 20 years. He has an AB, AM, and PhD in the fields of electronics and applied physics. Besides lecturing and teaching electronics, Al is presently involved with the contemplated changes in examinations for entrance into PTG.

Martin Tittle — A past president of the Detroit-Windsor Chapter, Martin has served as chairman of the Public Relations and Business Promotion Committee for the last five years. Besides lecturing at the University of Michigan and the National Music Camp in Interlochen, he writes piano care articles for a national pianists' magazine, *The Piano Quarterly*.

Harry Kapreilian — After serving in the Navy during the war, Harry joined the Charles Ramsey Corporation in 1946 and worked in all phases of their operation. He became president of the corporation in 1960 and sole owner in 1969. Very active in civic affairs, Harry has a long list of affiliations with church, social, and professional organizations.

George Defebaugh — Another Charter member of our group, George has held many official positions both locally and nationally. He worked for 12 years in the Los Angeles school system, taught at Los Angeles Trade-Tech, and has been with the Kawai America Corp. as national service manager for 9 years. A very fine drummer, George did recording work for Capitol Records in Hollywood during 1948 and 1949. He is the author of many of our library tapes and has taught innumerable times at technical meetings of all kinds.

Cliff Geers — In terms of years spent as an instructor, Cliff Geers probably leads everyone in our group. He began his career (which spanned 38 years) with Baldwin, eventually achieving the position of plant superintendent. He started his own business in 1972, but is still asked for and graciously gives advice to a great number of technicians who call him.

Willard Sims — After managing his own retail store in Cincinnati, Willard joined the Baldwin Company in 1952 and is now their piano service manager. Part of his teaching program has involved the two-way telephone communication relay system, which was inaugurated about eight years ago and has proven very practical and popular with technicians everywhere.

Roger Weisensteiner — Roger is part of a third generation of piano technicians in his family and has worked in all phases of piano production. Of his 21 years in the business, 10 were spent as quality control manager and he is now the national piano service manager for Kimball & Bosendorfer.

Bob Erlandson — Starting in 1962, Bob did dealer work for six years, after which he developed the course on piano technology at Western Iowa Technical College. In 1974 he became self-employed and is now a consultant for Baldwin and does a training program for them at Conway, Arkansas.

Bill Long — Bill has a bachelor's degree in electronic engineering and has been with Superscope for over three years. He has been a design engineer for seven years and has instructed at the Pianocorder training and educational seminars since their beginning in February 1978.

Jim Coleman — A technician since 1940 and a Craftsman member since 1958, Jim worked for the Baldwin Company from 1970 to 1974. His father tuned for Baldwin in the 1920's and now there are four generations of piano technicians in his family. Jim's major interest is in piano scale design and he has taught at every PTG convention except three.

Newton Hunt — A graduate of the Emil Fries Piano Hospital, Newton started his professional work in El Paso in 1964. From 1966 to 1971 he was instructor of piano technology at the New York Association for the Blind. He joined PTG in 1965 and has taught at many of our conventions.

Jim Campbell — Jim, who studied music at the University of Southern California, built his first harpsichord in 1963. He joined PTG in 1976 and divides his professional time between harpsichords and piano repairing.

Clayton Harmon — With his father as a tutor, Clayton began his professional career in the late 1930's. He joined ASPT in 1946 and has held the PTG post of southeast regional vice president.

Marion Seller — A past president of the Twin Cities Chapter, Marion joined our group in 1964, which was the same year he started in the profession. He has played church organ for 35 years and is currently the chairman of our local PTG Examination Committee.

Norman Neblett — Starting as an apprentice without pay, Norman built up a clientele through store tunings. He did tuning work for Capitol Records (30 years), Warner Bros. (21 years), and the Music Center (10 years). For 29 years Norman has serviced the 110 pianos at the University of Southern California. He is a Charter member of PTG and has taught many classes on a variety of subjects at technical meetings of all kinds.

Marlyn Desens — Marlyn began tuning on a part-time basis in 1950 and joined PTG in 1959. He was the first president of the Twin Cities Chapter and has instructed at a number of local and regional seminars on different subjects.

Yat-Lam Hong — Yat-Lam is very well known as past technical editor of the *Journal*. He joined PTG in 1971. In addition to operating his own piano service business, he is also the full-time staff piano technician at Western Michigan University in Kalamazoo, Michican.

Virgil Smith — Concert tuning is a specialty for Virgil, who began his professional work in 1954. He has tuned at Orchestra Hall in Chicago for many years. A member of PTG for 15 years, he has also been on the faculty of the Moody Bible Institute for 27 years.

Ben McKlveen — Everyone will know Ben from his role as Institute director in 1978. He began his training in piano technology at the old Conservatory of Music in Cincinnati in 1948, and in 1952 began teaching the course there himself. He has an educational degree plus a music degree on the oboe. He joined ASPT in 1953 and is a Charter member of PTG.

Carl Granberg — Posey Manufacturing Company, for whom Carl has worked 43 years, is celebrating 70 years in business this year. Their company made the spars for Lindberg's plane, The Spirit of St. Louis. Carl is a specialist in spruce woodworking and has taught at several of our national conventions.

This is your brief introduction to the Technical Institute members who will help you become a more well-informed and better-educated member of PTG. Everyone at the Institute is eager to share this wealth of knowledge with you and we are looking forward to seeing you in Minneapolis, the "City of Lakes," on July 23, 1979. We know you'll be glad you came. ■

STEVE MENCHER

ADVICE FOR NEW PIANO OWNERS

Congratulations! If somehow Santa managed to get a pinao down the chimney and into your house this Christmas, perhaps you're wondering how best to take care of this new addition. Here are some tips, courtesy of the San Francisco Chapter.

The first problem you have is where to put the piano. Keep in mind that the piano's wood and felt insides will tend to change their shape when exposed to extremes in temperature and humidity; therefore, keep your new piano out of direct sunlight and away from heaters and air conditioners. If moisture in your area varies greatly from season to season, ask your piano tuner about a humidity control system. He can also recommend a proper polish to enhance the beauty of your piano's fine finish.

Most new pianos will be tuned by the dealer soon after they arrive in your home. After that, most manufacturers suggest that the piano be tuned three more times during the first year and twice a year thereafter. Regular tuning is important to keep the piano up to A-440 (concert pitch), the internationally standardized musical frequency. If the piano falls below A-440, then those who play it (especially young children just starting piano lessons) may become used to a lower pitch and have trouble in their further musical education. Tuning also helps ensure that the tremendous pressure of the strings on the cast-iron frame of the piano is kept in balance.

Members of the Piano Technicians Guild are also trained in other crucial operations, two of the most important being regulation and voicing. Simply put, regulation involves checking and setting every measurement in the piano from the key to the string to keep it playing as well as when it left the factory; voicing is treatment of the hammer to ensure evenness of tone throughout the instrument.

Don't be intimidated by the big new fixture in your home. Careful placement, simple cleaning and polishing, and a twice-yearly call to your piano technician will keep your piano in perfect shape to serenade Santa next Christmas and for years to come.

BACKGROUND INFORMATION

The Piano Technicians Guild is a nonprofit corporation which, according to its bylaws, aims "to provide the best possible piano service to the music world... in an ethical way, keeping the piano user's needs and best interests uppermost." ■

ELOISE M. ROSS

YOUR SECURITY BLANKET

Taxes — You **must** pay Uncle Sam (your silent partner) by April 15.

Stop! There is a way to have him **share** a portion (up to $1500) of your hard-earned money with you **this year** on 1978 earnings!

Decide **now** to pay yourself too. Set up an Individual Retirement Account before April 15 — an IRS-approved system of deducting 15 percent of income (maximum of $1500) from your earnings. This might even put you in a lower tax bracket!

The earnings on your account are **not** reportable income until you retire, when you definitely will be in a lower income tax bracket.

There are four approved plans — government bonds, savings accounts, life insurance, and annuities. Each has its own merits; however, for flexibility plus guarantees, the annuity has it all. You can't outlive it, for there is a guaranteed monthly income as long as you live!

If you **really** want to do something **now** for **yourself**, do it. Call for details. All we need for a quote is your birthdate and income.

Do you know about all the other good voluntary insurance plans available to you as PTG members? There are Medical, Dental, and Life; Accidental Death and Dismemberment; Tool and Bailees' Customer; and Supplemental Group Life coverages. ■

COMING EVENTS

NOTE: All seminar dates must be approved by the Conference and Seminar Committe. Please submit all dates to the home office on the appropriate Request for Seminar Approval form.

MARCH 3, 1979
BALTIMORE
CHAPTER SEMINAR
Baltimore, Maryland
Write: Morris Millman
8326 Scotts Level Road
Baltimore, MD 21208

MARCH 22-24, 1979
TENTH ANNUAL
PACIFIC NORTHWEST
CONFERENCE CONVENTION
Olympia, Washington
Write: Al Seitz
PNW Secretary-Treasurer
1517 Medfra
Anchorage, AK 99501

MARCH 24-25, 1979
CENTRAL WEST
REGIONAL SEMINAR
Lincoln, Nebraska
Write: Richard West
Westbrook Music Building
University of Nebraska
Lincoln, NE 68588

MARCH 30-APRIL 1, 1979
PENNSYLVANIA
STATE CONVENTION
Gettysburg, Pennsylvania
Write: Dick Bittinger
107 West Main Street
Brownstown, PA 17508

APRIL 27-28, 1979
CONNECTICUT/NEW
ENGLAND SEMINAR
Hartford, Connecticut
Write: W. Dean Howell
258 Airline Road
Clinton, CT 06413

APRIL 27-29, 1979
MICHIGAN
STATE CONFERENCE
Write: Dale R. Newhouse
3674 Wentworth Drive SW
Wyoming, MI 49509

APRIL 27-29, 1979
MISSOURI
STATE CONVENTION
Sheraton Inn
Springfield, Missouri
Write: Rodney W. Murdaugh
2762 South Campbell
Springfield, MO 65807

MAY 5-6, 1979
WASHINGTON D.C.
REGIONAL SEMINAR
Washington D.C.
Write: Ruth Ann Jordan
4 East Granville Drive
Silver Springs, MD 20901

MAY 11-12, 1979
INTERMOUNTAIN CONVENTION
Write: Lynn H. Hansen, President
1120 Elm Avenue
Provo, UT 84601

JULY 23-27, 1979
PTG NATIONAL
CONVENTION
Minneapolis, Minnesota

OCTOBER 7-9, 1979
SOUTHWEST FLORIDA
STATE CONVENTION
St. Petersburg Beach, Florida
Write: Walter Kerber
615 Lafayette Court
Sarasota, FL 33577

OCTOBER 13-14, 1979
OHIO STATE SEMINAR
Columbus, Ohio
Write: Benjamin F. Wiant
865 Bryden Road
Columbus, OH 43205

OCTOBER 19-21, 1979
TEXAS STATE
ASSOCIATION CONVENTION
Fort Worth, Texas
Write: Tom Blanton
P.O. Box 8
Sherman, TX 70509

APRIL 11-12, 1980
NEW ENGLAND SEMINAR
Sheraton Inn
West Lebanon, New Hampshire
Write: George Wheeler
11 Cherry Hill
Springfield, VT 05156

APRIL 18-20, 1980
PENNSYLVANIA
STATE CONVENTION
Altoona, Pennsylvania
Write: Fred Fornwalt
1333 Logan Blvd.
Altoona, PA 16602

CENTRAL PENNSYLVANIA CHAPTER

A PUBLIC RELATIONS EFFORT

If your chapter assumes that everyone in your area knows all about the Piano Technicians Guild and piano tuning, repair, and care, we suggest you plan a public relations project similar to one our chapter (the Central Pennsylvania Chapter) completed. It was a lot of fun, but we were surprised at the public's reaction to our abilities. We were shocked to learn how little they, and our own customers, knew about us. We are already enjoying the results of our efforts and feel that everyone in the organization will reap many benefits.

We chose the well-organized Keystone Country Arts Festival for our demonstration. The annual event, held on the edge of Altoona at Lakemont Park, is sponsored jointly by the Blair County Tourists Association and the Altoona Chamber of Commerce.

The chapter president, Fred Fornwalt, explained our needs and interests to the festival committee and we were offered a 9- x 9-foot booth inside one of the park's permanent buildings for a weekend fee of $40, including electricity. Our next move was to borrow and suspend from the ceiling four 8-foot fluorescent lights. A long narrow mirror was also attached at an angle from the ceiling to permit people to look over other viewers and see directly into our working area.

Our booth was located in the center of the park, along the lake. The building (called the Casino) is used for church groups, dancing, and other activities during the summer months. The almost perfect weather brought 30,000 visitors to the park on Saturday, with an additional 65,000 arriving on Sunday. Crowds of visitors began arriving early in the morning, and from noon until dark the park was crowded with interested spectators.

The piano used for demonstration (compliments of Will Snyder) was a 45-year-old Weaver grand, refinished except for the final coats. A new soundboard had been installed and the new bridges were partially notched and pinned prior to the show. All our members present took turns notching bridges and installing bridge pins, new tuning pins, and strings. Driving several pins would always attract a crowd. We would then stop and explain the things that had been done, the operations in progress, and what was necessary to complete the piano. Most of the interested spectators asked questions after our brief rundown, and we took plenty of time for answers. About 10 hours of normal work were involved, but we worked slowly to stretch the demonstration and make it last from 10 a.m. to 10 p.m. each day. During the show, 1500 *Care of the Piano* brochures were distributed, along with other piano literature.

In chatting with some of our own customers, we learned that they had been totally unaware that the services displayed were available in our area — our fault, of course. Now that we are aware of the picture, we are prepared to make a change for the better.

The promotional manager of the Altoona Chamber of Commerce visited

Our display booth was located at the end of the aisle, with a fine view of the lake. The background signs, made especially for this show, cost $25.

We weren't kidding about having fun, as shown in this photo of Ken Sloane, Fred Fornwalt, and Darrel Cadle.

Claude Amps answers questions for a young lady.

Fred Fornwalt and Bill Hocherl relax during a break.

our booth every few hours to check our progress. He admitted that at first he had not been overly elated with the thought of piano tuners being a part of the show. After observing the interest that our group generated, he insisted that we return next year.

The cost of the show was reasonable: rent $40, signs $25, printed handouts $125, and drayage of the piano $30. We know that this venture did not completely educate the public, but we did learn how much they didn't know about us. Some benefits and rewards have already come our way from this two-day exposure, and we know we will be most willing to do it again! ■

Crowds of visitors viewing craft displays outside the Casino.

CHARLES HUETHER

THE DISSATISFIED CUSTOMER

In our previous article on dissatisfied customers, we discussed possibilities of avoiding problems before they happen. In this article we will discuss the situation after it happens.

There are two kinds of dissatisfied customers: (1) Those who do not like what you did and decide they will never give you their business again — You will never hear from them or see them again. They have no time to argue. They only remember you as a person they will not do business with again and as someone to warn their friends about. A total loss or worse. (2) Those who complain to you — They call you up to tear you down, and that is wrong. They can sound very unreasonable sometimes, but here is *gold*. Here you have a second chance. This is your opportunity to change a liability into an asset.

The person who complains is the person *who wants to be satisfied by you*. In the first case the customer never gives you a chance; in fact, you never know what you did right or wrong. But in the second case the dissatisfied customer lays it all out for you, and if you did not listen when you sold the job, you had better listen the second time around.

What often happens is that the customer does not understand our jargon and uses words incorrectly. He says that you tuned the piano and now the keys stick. You can never explain that there is no connection between the two, but you can correct the problem and leave food for thought about how a piano works. He claims that a note is "out of tune," but you know that it is poorly voiced and this is the reason the note sounds funny. Don't argue with him that the note is in tune; fix it if you can, and leave more food for thought about the workings of a piano.

You must always be alert and ready to listen to the complaining customer. Never respond in anger if the complainer comes on strong or unfairly. Don't overreact so that you mind is clouded. Your primary obligation is to learn what the customer is saying, what they really mean, and relate this to the job you just completed. Make sure the problem is corrected, both in the customer's mind and in the piano. If you do it right, you have a friend for life — someone you have turned from dissatisfaction to satisfaction. He will never forget you and you have acquired an asset — a regular customer who will recommend you to friends.

Dissatisfaction should be kept to a minimum. In this day and age, everyone has their own favorite story about servicemen who charged high and delivered low — whether it be television, auto, appliance or piano. Do your best to be the refreshing exception. Spend a little time reviewing your own experiences with servicemen and recall what you did not like about them. Then review your own work schedule and performance to make sure you do not copy the faults you find in others. ■

BOB RUSSELL

Get Hooked With PTG!

Everyone wants a chance to receive prestigious President's Club awards or to sport a Booster/Restorers Club ribbon at the 1979 Annual Convention. To ensure that every Booster Club point is credited to your account, and that every Restorer of a former member is recognized, the Membership Services Department requests the following:

1. Please **print** your name after your signature when you endorse a person's membership application. (Many signatures are difficult to read.)

2. If the member is a restored member, please **write this fact on the application.** (Many of the Membership Services Department's "inactive files" are inadequate and only retained for a certain number of years.)

The following points are scored for signing up the various ratings: Craftsman, 6 points; Apprentice, 5 points; Allied Tradesman, 4 points; Associate, 3 points; Affiliate, 2 points; Student, 1 point. When you get a total of 24 points you become a member of the President's Club; all others are Boosters.

PRESIDENT'S CLUB

Schoppert, Robert — S. Dakota

BOOSTER CLUB
(1 to 23 points)

Aguirre, Julian — Member-at-Large 1
Avolese, Frank — Long Island-Suffolk 11

Bach, Philip F. — Twin Cities 7
Ballard, William — New Hampshire 6
Barford, Wallace — Capitol Area 6
Baskerville, Henry — Richmond 18
Bell, Hamilton — Cleveland 1

Bible, Dana — Greenboro, N.C. 5
Bittinger, Dick — Reading 1
Bloch, John — Denver 1
Boyd, Thomas W. — Philadelphia 1
Brandom, William S. — Kansas City 6
Brownfield, Gary — Boston 6
Buck, Gene — Sacramento Valley 1

Carbaugh, Bob — Chicago 5
Carr, R.V. — Central Florida 6
Caskey, Ralph — Greensboro, N.C. 5
Coleman, J.W., Sr. — Phoenix 1
Coleman, Loring — Las Vegas 1
Conner, J.S. — Hampton 6
Crabb, Larry — Atlanta 2
Crowe, James — Washington, D.C. 1
Cunningham, Jess — New Orleans 14

Dege, Ernest — Los Angeles 5
Deptula, Walter — East Texas 6
Desmond, Frank — Dallas 17
Donelson, James H. — San Francisco 1
Drewa, Edward — Twin Cities 1
Dye, William — Santa Barbara 11

Eaton, Wendell — Washington D.C. 1
Edwards, William E — Detroit-Windsor 1
Epman, Lawrence — Wisconsin 5
Evans, Dan — Los Angeles 5

Finger, Chris — Denver 1
Flegle, R.H., Sr. — Twin Cities 6
Freeman, Marion — N.C. Louisiana 6

Garrett, Joseph — Portland 5
Geiger, James — Dayton 6
Giller, Evan — New York City 10
Gold, Jimmy — Texoma 6
Grace, John — Puget Sound 1
Griffith, LaVerne — Buffalo 8

Hanson, Sigurd — Houston 1
Hauck, Jack — Phoenix 1
Heischober, M. — L.I.-Nassau 5
Hendrickson, William — Santa Clara 1
Hershberger, Ben — South Bay 1

Higgins, Richard — Hawaii	6
Hipkins, David — N. Virginia	6
Hopperstad, J.M. — Sacramento Valley	1
Hulme, Gregory — Kansas City	6
Jeffers, James — Phoenix	5
Johns, B.J. — Northeast Florida	1
Jones, Joel A. — Madison	6
Joseph, Paul — Philadelphia	6
Juhn, Ernie — Philadelphia	6
Kast, Frank — N. Virginia	5
Kelley, Allen — W. Massachusetts	12
Keller, William — Reading-Lancaster	6
Killberg, George — Twin Cities	5
Krefting, Jack — Cincinnati	5
Krystall, Darwin — Los Angeles	1
Kuraya, Ben — Hawaii	12
Lake, Robert — Santa Barbara	1
Lamb, D.E. — Los Angeles	5
Lawrence, P.A.U. — Blue Grass	12
Leach, W.F. — Richmond	10
Macchia, Allen — NW Indiana	5
Macchia, Frank — N.W. Indiana	6
MacConaghy, Henry — San Diego	12
Marciano, Bill — New Jersey	5
Marten, Gilbert — Central Iowa	6
McAninch, Daniel — Falls Cities	1
McDonald, Robert K. — Mississippi-Gulf Coast	5
McIntyre, John — Lansing	6
McKlveen, Ben — Cincinnati	5
McNeil, Thomas — Lansing	6
McVay, James — Vancouver, B.C.	17
Mehaffey, Francis — Pomona Valley	1
Mensing, Daniel — Chicago	5
Miller, D.L. — Minnesota-North Iowa	6
Monroe, Paul — Orange County	5
Moore, Donald — Fresno	6
Morton, W. Don — Los Angeles	3
Murdaugh, Rodney — SW Missouri	1
Neie, Gary — N.C. Louisiana	5
Novinski, Tony — Wichita	6
Persons, Glenn — Tucson	6
Peters, Patricia — Central Florida	1
Peterson, Clarence — Santa Cruz	1
Peterson, Gerald — West Michigan	6
Peterson, Jerry — Western Michigan	7
Pizza, Anita — Miracle Strip	6
Preuitt, Ernie — Kansas City	6
Ralon, Carlos K. — Washington D.C.	7
Richardson, J.W. — Idaho West	10
Rooks, Michael — Ozark	5
Russell, Bob — Cleveland	5
Sankey, Lee M. — Houston	1
Schneider, William — Lansing	3
Schoppert, Robert — S. Dakota	24
Seller, Marion — Twin Cities	6
Seitz, Al — Alaska	6
Sierota, Walter — Philadelphia	1
Sims, Willard — Cincinnati	3
Stegeman, W.J. — Minnesota-North Iowa	1
Stern, Walter — St. Louis	6
Story, Everett — E. Washington	6
Tapp, Kenneth — West Memphis	18
Thatcher, Walter — St. Louis	6
Tipple, Robert — Member-at-Large	6
Wheeler, Clifford — Boston	6
Wheeler, Richard — Portland	5
Whitby, Elmer — Paducah	6
White, T.E. — Northwest Florida	6
White, Walter — Baltimore	6
Willis, Aubrey — Central Florida	5
Winslow, Allyn — Boston	6
Witting, Edward — South Bay	1
Zehme, Uwe — South Florida	1
Zellman, Adelaide — Connecticut	1
Zeringue, Nolan — New Orleans	1
Zoller, Richard — Norfolk	6

RESTORERS CLUB

Juhn, Ernie — Philadelphia
Macchia, Frank
Preuitt, Ernie — Kansas City
Welton, T. Scott — Connecticut

Welcome Aboard New Members!

BUFFALO CHAPTER
SHEESER, P. SCOTT, Craftsman
Star Route, Golden Hill Road
Great Valley, NY 14741

BLUE GRASS CHAPTER
FORTNER, DONALD H., Craftsman
576 Judy Lane
Lexington, KY 40505

CALGARY CHAPTER
MUNRO, L. MICHELE, Craftsman
1840 29th Avenue SW, No. 2
Calgary, AB, Canada T2T 1M8

CAPITAL AREA CHAPTER
LAPO, RICHARD, JR., Craftsman
Box 372
Kinderhook, NY 12106

EAST TEXAS CHAPTER
THOMASON, DAVID H., Craftsman
Route 3, Box 247-B
Jacksonville, TX 75766

FALL CITIES CHAPTER
STEWARD, B.K., Student
108 Chadwick Road
Louisville, KY 40223

GREENSBORO CHAPTER
GIBSON, TIMOTHY J., Apprentice
4946 LaCasta Lane
Walkertown, NC 27051
HATCHER, JOHN K., Apprentice
690 North Leak Street
Southern Pines, NC 28387

HAWAII CHAPTER
FUKUMOTO, ROBERT Y., Craftsman
3227 Kaunaoa Street
Honolulu, HI 96815
LEWIS, ROLAND, Craftsman
1785 South King Street
Honolulu, HI 96826
MICHAEL, DON, Craftsman
824 Kinau Street, No. 507
Honolulu, HI 96813

HOUSTON CHAPTER
FILLMORE, WILLIAM, Student
8211 Shady Arbor Lane
Houston, TX 77040
PAREDES, SERGIO, Student
415 West Polk, Apt. 2
Houston, TX 77019

LANSING CHAPTER
BOOTH, DARRELL, Allied Tradesman
Route 2, Box 510
Berrien Springs, MI 49103
McKOWEN, FRANK J., Craftsman
1611 West Rundle Avenue
Lansing, MI 48910
SHANTZ, NELSON C., Craftsman
1308 West Madison
Ann Arbor, MI 48103

NASSAU CHAPTER
WILLIS, GODFREY, Apprentice
96 School Street
East Williston, NY 11596

NEW HAMPSHIRE CHAPTER
ROE, EUGENE, Craftsman
Route 1, Box 91
Greenville, NH 03048

NORFOLK CHAPTER
ROWE, JOSEPH L., SR., Craftsman
3036 Tyre Neck Road
Chesapeake, VA 23321

NORTH CENTRAL LOUISIANA CHAPTER
SMITH, ROBERT, Apprentice
303 Hermitage Road
Pineville, LA 71360

NORTH DAKOTA CHAPTER
STOKES, ARTHUR H., Craftsman
Medina, ND 58467

NORTHWEST INDIANA CHAPTER
YOUNG, NICK T., Craftsman
8614 Walnut Street
Munster, IN 46321

NOVA SCOTIA CHAPTER
MacDONALD, MICHAEL, Student
26 MacArthur's Road
Prime Brook
Sydney, NS, Canada 51S 2J1

OZARK CHAPTER
REID, JOHN C., Apprentice
1114 Falcon
Columbia, MO 65201

PHOENIX CHAPTER
BURNS, JAMES, Apprentice
846 Fairview Avenue
Prescott, AZ 86301

RENO CHAPTER
DOUCETTE, FRANCOIS, Craftsman
2219 Washington
Box 3354
Stateline, NV 89449

RICHMOND CHAPTER
COBBLE, THOMAS C., Apprentice
P.O. Box 277
Fork Union, VA 23055

SANTA CLARA CHAPTER
PETERSON, C.R., Student
2232 Pruneridge Avenue
Santa Clara, CA 95050
RUMBOLZ, H. HART, Student
2566 Homestead Road
Santa Clara, CA 95051

SOUTH DAKOTA CHAPTER
COATES, TIMOTHY C., Craftsman
811 North Fairfox
Sioux Falls, SD 57103

WASHINGTON D.C. CHAPTER
EVANS, ELIOT, Student
1453 Potomac Heights Road
Oxon Hill, MD 20022
ROBERTSON, CALVIN A., Craftsman
6303 Hill-Mar Drive, No. 4
Forestville, MD 20028

WESTERN MICHIGAN CHAPTER
DeBOLT, GEORGE E., Craftsman
5521 Lovers Lane
Kalamazoo, MI 49002

MEMBER-AT-LARGE
McCULLOUGH, KERRY L., Student
11048 Sam Snead
El Paso, TX 79936

DUGGAN, MICHAEL
Pittsburgh Chapter
GIROUX, JOSEPH
San Francisco Chapter
MANGUS, RANDALL
Pittsburgh Chapter
OSBORNE, JOSEPH
South Central Pennsylvania Chapter
SETHMAN, ROGER
Richmond Chapter
WINTER, RONALD
Indianapolis Chapter

Reclassifications

CRAFTSMAN
BAER, DOUGLAS
North Central Louisiana Chapter
BLAIR, DEAN
South Central Pennsylvania Chapter
DUGGAN, JAMES
Pittsburgh Chapter

APPRENTICE
BRANCH, YVONNE
San Francisco Chapter
FERRO, MICHAEL
Western Michigan Chapter
NORMAND, EMILE
Montreal Chapter

JOHN BLOCH

CHIPS OFF THE OLD BLOCH

At the California State PTG Convention in February, the question of whether or not a soundboard could be recrowned was often asked in my class. Consequently, I thought I would run a panel discussion on this important part of the piano — the soundboard. The discussion took place at the ASPT Convention in the summer of 1956. The panel consisted of Robert Trefz, Otto Trefz & Company; Don Morton, Pacific Supply Company; John Challis, harpsichord builder; Edward Sambell, Sambell Piano Shop; Erwin Otto, Piano Rebuilding; Charles Frederick Stein, technical advisor for Pratt Read; A. Hoffman, foreman for Steinway & Sons; Robert Hayward, technician; Bob Johnson, Schaff Piano String Corporation; and Ted Gose, former technical editor, who acted as moderator.

Perhaps only a small percentage of practicing piano technicians do major soundboard work but, nevertheless, all should be well informed on the subject so they can intelligently advise their customers when repairs of this nature are called for.

Moderator: The question for discussion by the panel is, "Can a soundboard be recrowned?" A symposium is rather flexible (just as it should be); therefore, in expressing your opinions, consideration should be given as to whether the recrowning of a soundboard is advisable, or whether it would be better to replace a flat soundboard with a new one.

Pianos with flat soundboards are being restrung in many shops, and the public is made to feel that the piano has been completely rebuilt. The elements that go into the making of good piano tone are dependent upon each other and, if there is something lacking with one or the other, that good resonant tone is also lacking. The discussion will, therefore, be centered on the soundboard as a basis for good tone. The panel is now asked to discuss and present their views regarding that flat soundboard.

Mr. Trefz: It is the contention of the Trefz Company that a flattened soundboard should not be restrung. We feel that it should be replaced with a new soundboard. You will find that a board, once more pressure is put on it, is going to go lower. Some technicians have talked about inverted pressure. This is not practical. I think you will find that the only answer to a flat board is to replace the board with a properly crowned board. Once string pressure is put on it, the board will lose about 20 percent of the crown that it had before it was strung.

John Challis: I have never yet found proof that a soundboard needs to be crowned. A violin has a humped-up soundboard because you have to bow it. It must be shaped so that the violinist can put the violin under his chin and bow any one of the four strings. I have heard talk of crowning sounding boards for pianos since I was in my teens. We have never yet made a crowned soundboard for a harpsichord, and I make the loudest harpsichords that have ever been made with a flat board. I know of no reason why one must make a crowned soundboard or why it will respond any better than a flat one. Can anyone tell me that?

Moderator: I will not answer this question, although it was given some thought and consideration before the panel was selected. Unfortunately, we do not have scientific proof here today, but there is proof for it.

Mr. Stein: Mr. Challis and I are great friends, and have been for many years. What I am going to say will not agree with him on this point. Now, I could be wrong, and if so would like someone to show me where I am wrong. Mr. Challis must understand that the tension on soundboards for harpsichords is entirely different from the tension on a piano soundboard. Piano strings are stretched tighter and there is more down pressure on the board. When the board goes down (that is, flattens itself), it goes below its level and will hang on the bridge pins. It is this condition that brings on many of the twangs and clangs. We cannot get any tone from such a piano.

There is something else that may not have been given consideration. It would not do to crown the soundboard and then not shape the bridges to fit the contour of the crown. You couldn't possibly expect to get good tone. Let me show you why it is faulty to press a bridge to fit a soundboard instead of planing it to fit the contour of the board or, as we say, "the curve of the board." Suppose you laid a straight stick on the soundboard, and then bent it down and glued it to the board. It would probably hold, but you would at the same time put a twist into the stick, causing stress in the stick, which was made to conform by pressure to the curve of the board.

We must also remember that a soundboard bridge is about 1-1/4 x 1-1/4 inches, made of hard maple, and perhaps laminated or capped. Consider the pressure that would be required to press such a bridge down against the curve of a soundboard. It is only natural that one would also put a twist on the board that would tighten the board and prevent it from vibrating freely, as well as put a twist into the bridge which is being forced by pressure. Neither board nor bridge would be free when held up by pressure. The bottom of the bridge should be planed perfectly to fit the crown of the board so that, when laid on the board before gluing, it will fit the crown perfectly, without tension or pressure. In that way you will have

better pianos, especially in the treble break where tones are generally bad when the bridge must be cut so as to not interfere with the casting or plate.

I believe we have a man on the panel who knows as much about this as I do. I feel he will agree with what I have said.

Now for my opinion regarding the recrowning of a soundboard. I would say, if you men feel that you are recrowning boards successfully the way you are doing it, that is **your** opinion. I have never been successful in an attempt to recrown a board. I could never restore the crown of a soundboard once it went down, not even by cutting the ribs and putting a wedge in the bridge to bring up the board. Some shop men tell me that they put a jack underneath the soundboard and then boil a pot of water next to the jack under the board to steam it, raising it by pressure. They do this and they do that, and they believe it to be successful. I would be afraid to do any of those things. A good piano-maker would be afraid to use such methods. I say again, if a soundboard is down and will need a lot of shimming to make it look presentable, it will be cheaper (if you know how) to put a new board into a piano than to waste time with doubtful repair methods.

I shall now defer to Mr. Hoffman at the other end of the panel.

Dear Reader: I would like to take a break now and will continue with Part II in the next issue. ■

LUELLYN PREUITT

Wives' Lives

CORRECTION

Our apologies to Sue Hoffheins of the new South Central Pennsylvania Chapter for misspelling her name in the announcement in the December issue of the Journal.

Also to Dorothy Truax for incorrectly listing her as Dick Truax's wife instead of his mother.

And to Shirley Truax, Dick's wife, for not being noted as transferred from member-at-large to the new chapter.

Apologies to all!

Welcome to new members of the Auxiliary — From Dessie Cheatham, our personable and capable national treasurer, comes announcement of two new members. They are both in the California area, and we hasten to extend the hand of fellowship to Grace (Mrs. Francis) Mehaffey, 1031 Northwestern Drive, Claremont, California 91711, and to Eileen (Mrs. Herman) Koford, 3451 Cabrillo Blvd., Los Angeles, California 90066. Grace is a member of Pomona Chapter and Eileen of the Los Angeles Chapter. Welcome to both of these ladies. They will add much to our strength and enlargement, and I'm sure our dignity as well.

Congratulations to Pat and Jim Coleman, Jr., on the birth of a new baby. We have not as yet discovered whether we are anticipating a third-generation Guild member or a future enlarger, strengthener, and dignifier of the Auxiliary, but whichever, we are sure Pat and Jim Jr. will have a big part in the shaping of the future.

We hope you are all planning to be with us at the Minneapolis convention this coming July 23 through 27. The Auxiliary there is working long, enthusiastically, and skillfully to create a wonderful time for us. Come prepared to **dignify, strengthen, and enlarge** our organization.

Dues-paying time is fast approaching for the Auxiliary. Whether you are a member of a chapter which normally collects all dues, local and national, or whether you remit directly to the national treasurer, please attend to this small matter promptly. When notified, don't put the reminder at the "bottom of the stack." Remember, our dues go toward strengthening the Auxiliary, and our small token payment of $5 per year is really a bargain!

This writer is not much of a financier, but in thinking about where our $5 goes I came up with the following: For "goof-off" time with chapter friends — $1. (It will buy almost three cups of coffee over conversation in the coffee house while the technicians are having their meeting.) For your share of decorations and refreshments at the local chapter's one-day seminar — $2. For crafts projects for meetings — $1. For games and prizes — $1. Of course, this is combined with everyone else's $5. Wait a minute! You say you're talking about spending on the local level, and our dues go to national. Certainly they do. Come to the convention and participate in spending them! Nobody gets something for nothing.

As I said, I'm not a financier. Probably someone could knock all kinds of holes in my figures. But just consider what a bargain you get for your dues everywhere — at the local and national levels — before you "forget" it.

Don't neglect to **take a giant step forward** — see you in Minneapolis. ■

LESLIE J. HOSKINS

STRAY THOUGHTS

You may say potayto, potahto, or spud, but as of now you cannot say 'tater because this once humble item of diet has gone high-hat in the market — in some places selling for twice as much as the aristocratic orange.

It is not clear just why this once taken-for-granted staple food has become a near luxury item. It is, or can be, commonly grown throughout the land; but there it is in the supermarket produce department smugly waiting to shock shoppers with its price tag.

I don't know when the potato was first mentioned in history. It is recorded that in the 17th century King Frederick William commanded all peasants to grow potatoes under penalty of having their ears cut off. There was a bumper crop that year (of potatoes, not ears).

I have found no reference to potatoes in the Bible, but I am sure if they had been known in King Solomon's time he would have had them on his menu. Old Sol, you remember, had 700 wives and 300 concubines. As there were also plenty of servants, those 700 wives had nothing to do but sit around and chew the fat. Here is his daily requirement as set forth in the Good Book: 19 bushels of flour, 190 bushels of meal, 10 fat oxen, 100 sheep, and occasionally gazelles, roebucks, and plump fowl. A lot of food for a lot of femmes, and think of the decibel level at meal time — even without soup!

In modern times there is a law which forbids a man to have more than one wife at a time (who needs a law?), but there is nothing to prevent politicians from surrounding themselves with plenty of mouths to feed — and to feed them with government paychecks. One commentator cited the case of a United States senator who has a staff of 104 persons with a payroll of nearly $2 million, some of them drawing salaries of $50,000.

This may be an unusual case, and perhaps a justifiable one, but it does seem that the public payroll trough is becoming crowded. When former President Ford left the White House, he was quoted as saying that Congress was costing taxpayers more than $2 billion a year. There has been no lessening of this trend since Mr. Ford's time.

Political figures do not seem to be bothered by the publicity concerning their alleged extravagance; they just shrug it off. And so, regrettably, do the voters.

At tax time the taxpayer's anguish is heard throughout the land; he howls but does little about it. This apathy (or lethargy) by the voters is best illustrated by the often-told tale of the howling dog. This dog sat in a field howling mournfully while his owner worked nearby. The attention of a passerby was drawn to the scene and he called out, "What's the matter with your dog?"

"He's lazy," replied the worker.

"Nonsense! A dog doesn't howl because he's lazy."

"Mine does. He's settin' on a thistle and too lazy to get off."

Whether or not voters are lazy is disputable; however, it was reported that only 44 percent of those eligible went to the polls for the November 1978 elections. Inflation is becoming an economic octopus and little is being done about it.

British legislators are also feeling the public ire since sessions of the House of Commons have been broadcast. The *London Daily Telegram* observes, "Most listeners are shocked by what sounds like incoherent rudeness, and even childishness, by the Lower House."

Welfare programs are said to be a major cause of inflation. One government official has been quoted as saying the welfare cost for each man, woman, and child in the United States is about $2700 a year. The Ford Motor Company reports that health care (a fringe benefit) adds $120 to the cost of each car it builds.

Problems, problems, problems. Who has the answers?

The severe winter of '78/'79 must have caused many problems for piano technicians. That is no laughing matter, but there may be a smile or two in this newspaper ad sent to me by Art Hajek of Warm Springs, Montana: "Skis Tuned — Reasonable prices, prompt service."

I don't know just how one would go about tuning a ski (correct pronounciation "she"), but I opine that for a smooth job a good pitch would be required where anything of a feminine nature is concerned.

Charges have been laid against a California judge who offers defendants the choice of going to church or to jail. Jails provide free room and board; thus far the church just offers a coffee hour. But at least one church, the Community Church of Garden Grove, California, is doing well. It is believed to have set a record when contributions to the proposed Glass Cathedral totaled $1.25 million in just one day.

It seems that some have it and some don't. Bankruptcies in the United States were said to have reached a peak in 1978, not only where small enterprises or individuals were concerned, but we also learned about big cities in financial distress. Tokyo, the world's largest and capital city of highly industrialized and prosperous Japan, was reported to have been on the verge of bankruptcy two years ago. Scare news makes the front page; good news rates small headlines. Here's a goodie you probably haven't seen — the tiny village of Arieux, France, is

doing well. It is the garlic capital of the world, producing more than two million tons of that delicacy (phew!) annually for a waiting market, and probably with little competiton. One can easily see why Arieux remains a small community.

Now a salute to grandma. At long last health authorities concede that hot chicken soup does indeed help ease the distress of the common cold. So now we may expect a sharp drop in the poultry population during the flu season. But on the other hand, the British (who else!) claim they can make gasoline from chicken droppings. If that is true, it would be more practical to keep the hens and roosters alive and well fed.

But like the old folks say, "Never believe anything you hear and only half of what you see."

Thought for the Month: "Keep your face to the sunshine and you cannot see the shadow." — Helen Keller ■

CHAPTER NOTES

BOSTON CHAPTER

The Boston Chapter is trying to find individuals to be responsible for the various new and old tasks (action work, player, refinishing, and others) on their special projects — a Webster and an upright player. They aim to develop better quality control and coordination for these projects. The chapter hopes that this special effort on the part of their members will help them finish the projects. If the upright is rebuilt, and the Webster refinished, they could very well realize $1800 for their treasury. — G. Brownfield.

BUFFALO CHAPTER

Eight people, including one guest, were present at the Buffalo Chapter's January technical meeting. We all met at Popenberg's store on Sheriden Drive in Amherst from approximately 9 a.m. to 5 p.m.

Paint, sandpaper, and steel wool were provided by some members to continue finishing our ongoing upright piano project. The following was accomplished: (1) More white keytop edges were filed to rid them of roughness and sharpness and improve the appearance of individual keys to the rest of the keyboard in regards to spacing between keys, etc. (2) Various white keytops were recovered to rid them of scratches and drops of glue on the plastic tops. (3) The full black key level was raised in relation to the white keys. (4) Back backchecks were rebent to prevent blocking hammers when doing the actual dip later. (5) Lost motion, bridle tapes, and damper spoons were regulated. (6) The piano case (frame, outer boards, etc.) was sanded to prepare for painting of the piano by the store, with our chapter supplying the materials.

We hope to complete the key dip, letoff, tuning, and other touch-ups in February. The store's staff should be through with the painting job by then. Bill Hutzenbeulr will work on cleaning up the pedals.

The piano will be put in the showroom at Popenberg's store to be sold, and the store and chapter will share the profit. — Marty Turkiewicz, Jr.

CLEVELAND CHAPTER

Cleveland Chapter would like to remind those who are not chapter members to renew their subscriptions to the newsletter, *Butts and Flanges*. The subscription rate is still $3.50 per year. Please mail your check to: Dave Roberts, Treasurer; 8134 Crystal Creek Road; Sagamore Hills, OH 44067.

Members are reminded not to send chapter dues to the chapter's treasurer. The home office is now responsible for collecting chapter dues and members should have received a billing from home office. Members who have not received a billing are requested to notify home office.

DENVER CHAPTER

Talk about being innovative! The Denver Chapter just had a slide and WATS line technical presentation in which Will Sims, Cliff Geers, and Ben McKlveen talked to members over the WATS line and conference equipment. Will and Cliff explained (from Cincinnati) points illustrated in a slide presentation used simultaneously by the Denver Chapter for the technical presentation. What will these technicians think of next?

The focal point of the Denver Chapter's regular February meeting was electronic evaluation of piano tunings. The chapter secretary described ways that precision instruments can be used to make meaningful measurements and discussed the proposed national tuning test.

On February 25th, the chapter hosted a technical seminar led by Raye McCall of the Pomona Chapter. Raye's meaty and fast-moving agenda centered around the complete restoration of upright pianos. It included a noteworthy section on string scale improvement and a detailed portion on upright regulation. An unusual highlight was Raye's presentation on epoxies and adhesives which included having each attendee break a piano key and then perform a 5-minute stronger-than-new repair using a quick-setting epoxy.

The chapter continues to meet on the second Monday night of each month as they make plans for their next seminar on April 22nd. This one will be given by Jim Coleman, Sr., of the Phoenix Chapter and will include high-level aural tuning, concert voicing, and harmonic analysis of damper problems. — Lucius Day

LONG ISLAND NASSAU CHAPTER

The Long Island Nassau Chapter held their February meeting on the 13th at their workshop. President Gary Schultz announced the various regional seminars that were coming up. The New York State Unincorporated Business Tax was discussed and a possible test of the constitutionality of this tax by your reporter received pledges of financial support. Since professionals (doctors, lawyers, accountants, etc.) are excluded from this tax, it is, in reality, a punitive tax on those who do not have certain educational requirements.

Ernie Juhn was elected as our delegate to the national convention, with Norman Heischober the alternate. Godfrey Wills was accepted as an Apprentice member.

Our shop overhead runs about $5000 to $6000 a year. Once we get ahead by $2000, we will start a public relations program for the Piano Technicians Guild in this area. Norman Heischober has been working several months on this program, and the chapter has voted to proceed as soon as funds are available.

Bud Willis came from New Jersey in the snow and bitter cold to present his technical class on splicing strings. Members enjoyed it immensely and he received a great ovation. — Stanley Lipson.

NEW JERSEY CHAPTER

At the regular meeting of the New Jersey Chapter in January, we were pleased to have as our guests Kevin Matthews and Newton Hunt from the New York Chapter. These two fine craftsmen presented our technical program — "Aftertouch." Newton and Kevin developed an interesting format: Kevin presented the technical considerations (complete with graphs and mathematical figures), while Newton presented the practical considerations and demonstrated with a grand action model.

Both prefer the term "safety factor." According to them, "there are basically five reasons for regulating a piano: (1) power, (2) repetition, (3) evenness, (4) dependability, and (5) predictability." Using both graphs and action model, they demonstrated how these five reasons are influenced by dip, travel, drop, let-off, key height, and level; and the relationship between jack, knuckle, and repetition height.

We are in the debt of these two fine craftsmen for their interesting and concise technical program. — Jeffrey J. Seise.

SACRAMENTO VALLEY CHAPTER

Something interesting is going on in the Sacramento Valley Chapter. They have started using some of their local talent, and chapter musicians are providing members with an evening or two of delightful music. Players pick their own selections, and instruments range from classical guitar to viola and/or piano. Technicians, associates, and friends are invited.

Sacramento reports that chapter dues for Craftsman and Apprentice members are now due and payable in the amount of $10 for each member. Checks are to be made out to: Sacramento Valley Chapter, PTG. Members not paid up by March 31, 1979, will become delinquent and have their names listed as such in the April newsletter.

SANTA CLARA VALLEY CHAPTER

Santa Clara Valley reports that their Hotel Search Committee, with the welcomed help of western regional vice president Sid Stone, has selected Marriott Hotel as the site for their 1980 California Convention. It is reported that the classroom facilities are better there than any ever seen at any convention.

HONESTY IS NOT ALWAYS THE BEST POLICY

Dear Readers:
For the next several months space will be devoted to those members who have special nontechnical problems in the pursuit of their trade and would like to receive advice for possible solutions. "Rosette" stands by waiting for your letters. Please write to the editor for her response. — DLS

Dear Rosette:

My husband has gotten himself in a bad situation and we need help. Ever since he started tuning pianos, he has given free service to relatives and friends, including about 20 members of our church. We are both beginning to wonder if this is right and how he can stop this practice without hurting a lot of feelings. — Perplexed

Dear Perplexed:

You are not the only one with this problem. I can suggest two possible solutions and perhaps our readers could give more.

(1) Take on a student — even a young member of your church. After minimum instruction in the fine art of piano tuning, turn him (or her) loose on these leeches. What better experience could a student receive? Of course, your husband, in living up to PTG standards, should be prepared to give complete training in both tuning and repair to this student.

(2) If the student solution is out of the question, start charging the full rate, have the check made out to your church, and **you** put it in the offering plate or hand it to the treasurer — **but** your husband should get credit for it. This goes for relatives and friends outside the church too. If you're not brave enough to do this, you should not complain.

CLASSIFIEDS

Classified Advertising Rates: Classified ads are 15 cents a word, with a $3 minimum. **Copy due** the first of the month preceding publication. **Address:** Managing Editor-Art Director/Charlona Rhodes, PTG, 113 Dexter Avenue North, Seattle, Washington 98109. Telephone: (206) 283-7440.

HELP WANTED

HELP WANTED — Tuner-technician wanted for established piano store selling Yamaha, other new and used pianos. Guaranteed salary. In Los Angeles vicinity. **Earl Schwab. Phone: (213) 839-8714. Culver City, CA.**

Salaried position beginning September '79 for a tuner-technician in a small, growing piano service firm in the Midwest. Send salary requirements, training, and experience resume' to: **PTG Home Office; 113 Dexter Avenue North; Seattle, WA 98109.**

WANTED — Piano tuner-technician full time for music dealer in sunny Florida. Write: **Bobb's Pianos & Organs; 304 West Hallandale Blvd.; Hallandale, FL 33009 or call Mr. Bobb (305) 456-7800.**

POSITION DESIRED

WANTED — Apprentice desires work-learn situation with craftsman tuner-technician. Prefer southern Indiana area, but will consider anywhere. **Danny Evanoff; 4539 East 25th Avenue; Lake Station, IN. Phone (219) 962-2141.**

TUNERDATA — Mail reminders make money for you! Computerize your mailing lists, set up duplicate card files by geographical codes or date-of-next-tuning, improve your cost controls, protect the safety of your valuable files with the computerized services of TUNERDATA. **See our booth at the 1979 Minneapolis Convention. Ed Fesler, RTT.**

FOR SALE

FOR SALE — 9' 3" Mason & Hamlin, Model CC-1. Pinblock, soundboard, and action parts replaced in 1971. Excellent condition. $10,000. Will consider trade for smaller unrestored quality piano. **Richmond Piano Rebuilders; 3133 West Cary Street; Richmond, VA 23221. Phone: (804) 358-1929.**

FOR SALE — Steinway Model "D" 9' Grand, S/N 451123. Used very little. Private party. Save dollars. **Leatherman; 539 Forest; Evanston, IL 60202. Phone: (312) 492-9705.**

PIANOS FOR SALE — Always on hand, 150 to 300 uprights! Plain case, art case, and players. Also 50 to 150 grands at all times, as is or rebuilt. Excellent brand names — no junk! All set up for inspection. Lowest possible prices. Call for quotes: **Owen Piano Wholesalers; 2152 West Washington Blvd; Los Angeles, CA 90018. Telephone (213) 883-9643.**

FOR SALE — Steinway Grand, Duo-Art model, S/N 194464 — without mechanism. Art case is walnut with inlay and carving on legs and sides. Double legs are connected by turned stretchers. Piano has been expertly maintained and is in excellent condition. $6300. **RichMar Piano School; P.O. Box 120122; Nashville, TN 37212. Phone: (615) 297-4235.**

advertiser's index

WANTED

WANTED — Used Sight-O-Tuners or Stroboconns. Contact: **Joseph Crone; 5770 Pinchtown Road; Dover, PA 17315.**

HELP WANTED — Experienced piano technician-tuner, full time. Excellent wages and working conditions, Anaheim, CA. Mailing address: **Piano Warehouse; 8081 Starr Street; Stanton, CA 90680. Phone (714) 821-3311.**

Open For Business!

We didn't forget the technician when we designed our newest school and chapel pianos, Conservatoire 2960 and the Chapel 2962.

Tops, fronts and fallboards detach without tools. The entire action slips out with ease. However, most mechanisms, including a sostenuto system, can be serviced *without* removing the action!

These new pianos also offer a new all-spruce Duraphonic Multi-radial ™ Soundboard which dramatically improves tuning stability. Laboratory tests prove that in environments with up to 90% relative humidity, solid spruce soundboards expand over 5 times more than the new Wurlitzer design, causing more serious changes in string tension.

It costs more to build pianos this way, but we believe that a quality instrument must be well maintained. Recognizing the importance of your work, we try to do ours just a bit better.

WURLITZER®

The Music People

DeKalb, Illinois 60115

PIANO TECHNICIANS GUILD
1979 APRIL UPDATE

MINNEAPOLIS IS FINE IN 79!

What's different about PTG Conventions??

As a guy who has attended and directed many, many, I can say truthfully PLENTY.

PTG members come EARLY FOR EVERYTHING. This has a tendency to catch us while we are still putting up chairs, banners, distributing papers, and catching our breath in the preparation stage.

PTG members are serious. They come to STAY and to SAY -- Not to play. Members like to participate, state their opinions, express their views, and make their concerns known.

PTG'ers like to learn. They have insatiable appetites for knowledge and skill. The CONVENTION is strictly secondary. The INSTITUTE is the reason most of the members invest their hard earned dollars to attend. It is for this reason that the Board members select the best technicians possible to run their institute.

True, the convention brings with it lots of fun and friendship. It enables old friends to get together, reminisce, talk of the old days, and savor the pleasant memories of the past. The razzel dazzel interests some, and the Trade Show brings people up to date on the latest trends in the marketplace and allows those in business an opportunity to establish contact with the potential customer.

BUT, for now, Minneapolis will be fine in '79; Philadelphia will be mighty in '80; and San Francisco will be fun in '81.

The registration brochures are about ready to mail, and it is our fervent hope that all who are planning to attend will make up their minds early because the entire process is much simpler if people PRE-REGISTER and EARLY.

REMEMBER, you are on your own for housing. Hotel registration cards will be included in the registration brochures, and they MUST BE RETURNED DIRECTLY TO THE HOTEL. Arrangements are being made for alternative housing for late comers and those who wish lower rates, but this brings with it disadvantages you must anticipate.

Please contact the HOME OFFICE for any information regarding the convention. On the INSTITUTE contact DENNIS KURK in Minneapolis. He can be called at (612) 484-3688.

CONVENTION

Clip your HOME OFFICE CONVENTION REGISTRATION FORM and mail it immediately to: Piano Technicians Guild, Inc.; 113 Dexter Ave. North; Seattle, WA 98109. BE SURE TO USE AN ENVELOPE IF YOU ENCLOSE A CHECK OR MONEY ORDER.

$tatement of Income & Expense

November 1, 1977 to October 31, 1978

INCOME:	
Membership Dues	$213,974.89
Membership Fees	5,072.50
Merchandise Sales (Less Purchases)	(1,047.42)
Publications	5,771.62
Convention	22,779.79
Other	17,250.51
Total Income	$263,801.89
EXPENSES:	
General Administrative	
Salaries and Fees	$ 75,495.46
Payroll Taxes and Benefits	8,475.76
Contracted Services	10,606.78
Rent and Utilities	11,170.30
Telephone	5,188.37
Office Supplies	6,551.06
Repairs and Maintenance	826.95
Depreciation - Equipment	1,493.66
Postage and Shipping	10,347.03
Printing and Copy Expense	3,085.20
State and Local Taxes	514.48
Equipment Rentals and Lease	1,466.99
Travel Expenses	15,961.27
Meeting Facilities Expense	209.07
Officers Expenses	1,464.05
RVP Expenses	4,045.21
Committees Expenses	47.08
Data Processing	4,825.90
Professional Fees	4,109.58
Film Distribution Expense	2,472.88
Other Outside Services	1,860.40
Cartage and Storage	499.00
Dues and Subscriptions	354.66
Insurance - Members	24,104.12
Insurance - Operations	3,617.53
Bad Debts - Written Off	10,208.86
Contributions and Dues	783.96
Interest Expense	169.32
Operating Manuals	530.23
Films and Tapes	2,005.56
Membership Development	1,581.32
Industry Promotion	1,227.74
Sundry Expense	1,036.21
Total Expenses	$216,335.99
GENERAL & ADMINISTRATIVE	($216,335.99)
EXCESS OF INCOME OVER EXPENSES	47,465.90

FISHER, WAGNER AND HUDSON - CPA's, SEATTLE, WASHINGTON

Your Board in Action!

SUSTAINING MEMBERSHIP (Life Members) A special letter and certificate is to be sent to all Sustaining Members.

PRODUCTION OF TECHNICAL FILMS PTG has purchased equipment for producing technical films suitable for showing at chapter meetings and other technical sessions. Former NERVP, Ernie Juhn, is already authorized to select suitable seminar classes for filming.

MEMBERSHIP CERTIFICATES New membership certificates are being produced for Craftsmen. All Craftsmen in good standing will receive one of the certificates, and each year upon full payment of all dues will receive an updated 'year insert' for the certificate.

MEMBERSHIP CARDS New annual membership cards are being ordered. These will replace the present permanent plastic cards and will be issued each year to those members whose dues are fully paid for the full dues period.

PTG JOURNAL - NOTICE OF SEMINARS Notice of seminars will be accepted for insertion in issues no sooner than six months before the event and will continue until after the event.

PTG JOURNAL - FREE PUBLICITY The only free publicity for any seminar, etc., shall be the notice in the "Coming Events" column.

PTG JOURNAL - CHAPTER NOTES A maximum of five lines per issue for publicizing seminars, etc., in Chapter Notes.

PTG JOURNAL - HALF-PRICE ADVERTISING Advertising rates for PTG seminars, etc., are half regular price.

PTG JOURNAL - GRATIS DISPLAY AD One display advertisement of a maximum of two column inches free for all PTG seminars, etc.

PTG JOURNAL - MAXIMUM ADVERTISEMENT SIZE FOR SEMINARS Maximum size to be one-half page.

PTG JOURNAL - TAPED On request, visually handicapped members may receive the taped Journal in place of the printed version at no extra charge.

WOMEN PIANO TECHNICIANS Special committee appointed to report on women technicians in PTG.

DEATH BENEFIT INSURANCE The death benefit insurance program was increased from $750 to $1,000 effective immediately.

Above is shown action taken by your executive board on behalf of the membership. In addition the Home Office was instructed to abide by the PTG Bylaws ARTICLE VI Section 6 regarding dues payments. For this reason members who have not made any payment on 1979 dues have been sent a special notice and those who do not respond are to be dropped. Reinstatement requires written approval from the chapter with payment of the dues. The PTG Journal is not mailed to members who are dropped until reinstatement is completed and we are not able to guarantee availability of back issues.

NOTE: *Howard J. McQuigg, of Monrovia, sent this form into the Home Office and we thought you might be interested.*

Dear Customer:

Although this inflationary spiral apparently must continue despite all efforts, with much cooperation on the part of my customers, I hope to maintain my highest quality service at minimum fees.

I have scheduled our next piano date as _____

Following are a few ways in which I believe you customers can derive the best possible returns from your piano servicing investment:

1. By telephone me a confirmation of our piano date -- or offer an alternate date and time which I shall try to reserve for your piano. Phone: 358-3728.

   For our mutual convenience, I have a telephone answering device which insures my receiving your message on your first call. Although this may require your talking to me via my impersonal tape, it does reduce telephone usage to a minimum.

2. During the tuning of your piano, try to keep all unnecessary sounds to a minimum - especially those of prolonged duration. Your piano tuner is attempting to adjust each of 200 strings to blend its six or more audible partials into a harmoniously tuneful musical instrument. He is literally a computer programming himself for an astronomical array of sound frequencies. (More than 200 followed by six zeros!)

   Following is a list of common sounds which your piano tuner must try to "program" himself (not always successfully) to reject lest they blend discord into your piano's tones:

ELECTRIC MOTORS	HOUSEHOLD NOISES	OUTDOOR NOISES
Washers and dryers	T.V.	Power equipment
Heating and cooling systems	Conversation	Aircraft
Vacuum cleaners	HI FI	Lawnmowers
Refrigerators *******	Prolonged running water	Traffic noises
Fish tanks **********	Pet birds	Roller skates
	Ticking clocks	Lawn sprinklers

3. Sometimes special tools or parts may be required. Please tell your piano technician in advance if there is anything about your piano which you believe may need special attention. Normally, I try to anticipate and correct problems before the pianist is aware of something amiss.

4. Now that your piano technician has blended the harmonious tones of this basic musical instrument to the greatest perfection he and your piano can attain, do enjoy many hours in your world of music.

THE PTG NOMINATING COMMITTEE SUBMITS THE FOLLOWING REPORT:

Nominated for PTG President ..... Bob Russell
Nominated for PTG Vice President..... Sidney O. Stone
Nominated for PTG Treasurer-Secretary ..... Charles Huether

Signed: Don Galt, Ernie Juhn, Martin Tittle, Jess Cunningham, Jack Krefting