Piano Technicians

Journal

July 1986

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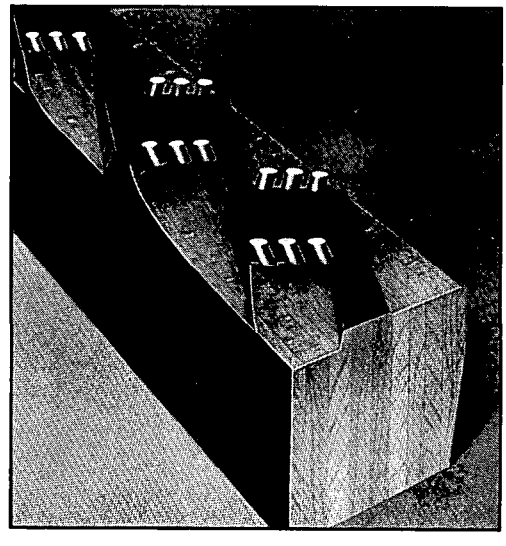

Third in a series of informative ads on piano tone published by Baldwin Piano & Organ Company exclusively for the benefit of piano technicians.

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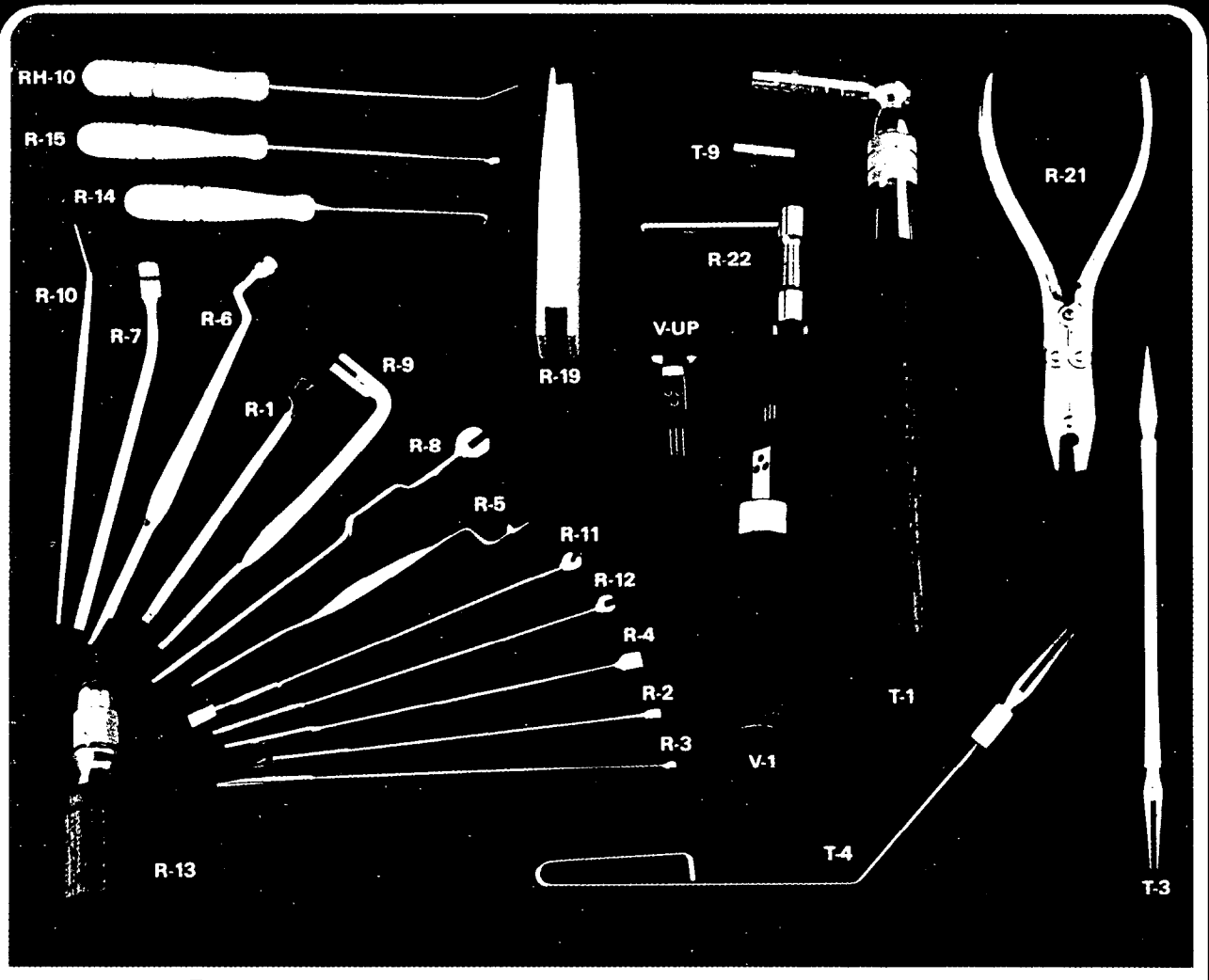

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R-7	POST WIRE BENDER (UP)
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R-9	SPOON BENDER (UP)
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R-11	DAMPER REGULATOR
R-12	DAMPER REGULATOR

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R-19	BACK CHECK REGULATOR
R-21	WIRE PLIERS
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PIANO TECHNICIANS JOURNAL **July 1986**

Official Publication Of The Piano Technicians Guild, Inc.
Volume 29 Number 7

IN THIS ISSUE...

The *Piano Technicians Journal* (ISSN 0031 9562) is the official publication of The Piano Technicians Guild, Inc., 9140 Ward Parkway, Kansas City, MO 64114. The *Journal* is published monthly, with two issues in December. Second class postage paid at Kansas City, MO., US ISSN 0031 9562 foreign and domestic. POSTMASTER: send address changes to: *Piano Technicians Journal*, 9140 Ward Parkway, Kansas City, MO 64114.

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An Open Letter to Guild Members

Barbara Parks, who has served as our Executive Director for the past 2 1/2 years, is assuming new responsibilities within our management firm, Martin Fromm & Associates, effective January 1, 1987. We are indebted to her work during these formative years as our organization established itself in new surroundings. I know you join me in wishing her well.

In anticipation of this important change the Piano Technicians Guild has conducted a search and review process to identify her successor. I am pleased to announce that Board has selected Larry Goldsmith as Executive Director Designate, to serve in that capacity until the end of 1986, at which time we expect he will be confirmed as Executive Director. I am sure you will join me in congratulating Larry and will give him your full support.

I also wish to announce that Martin Fromm & Associates has informed me that Miriam Patterson, who has served as Administrative Assistant to Barbara Parks for the past 1 1/2 years, will be promoted to the newly created position of Director of Member Services for the Piano Technicians Guild. We are delighted and pleased that recognition of Miriam by this promotion will be of great benefit to the Piano Technicians Guild.

We are fortunate to have two such dedicated and experienced people as Larry and Miriam among our existing staff. Their work for The Piano Technicians Guild in their current capacities is well known to all of us. We look forward to a continuation of that excellence and growth in their new positions.

Charles P. Huether

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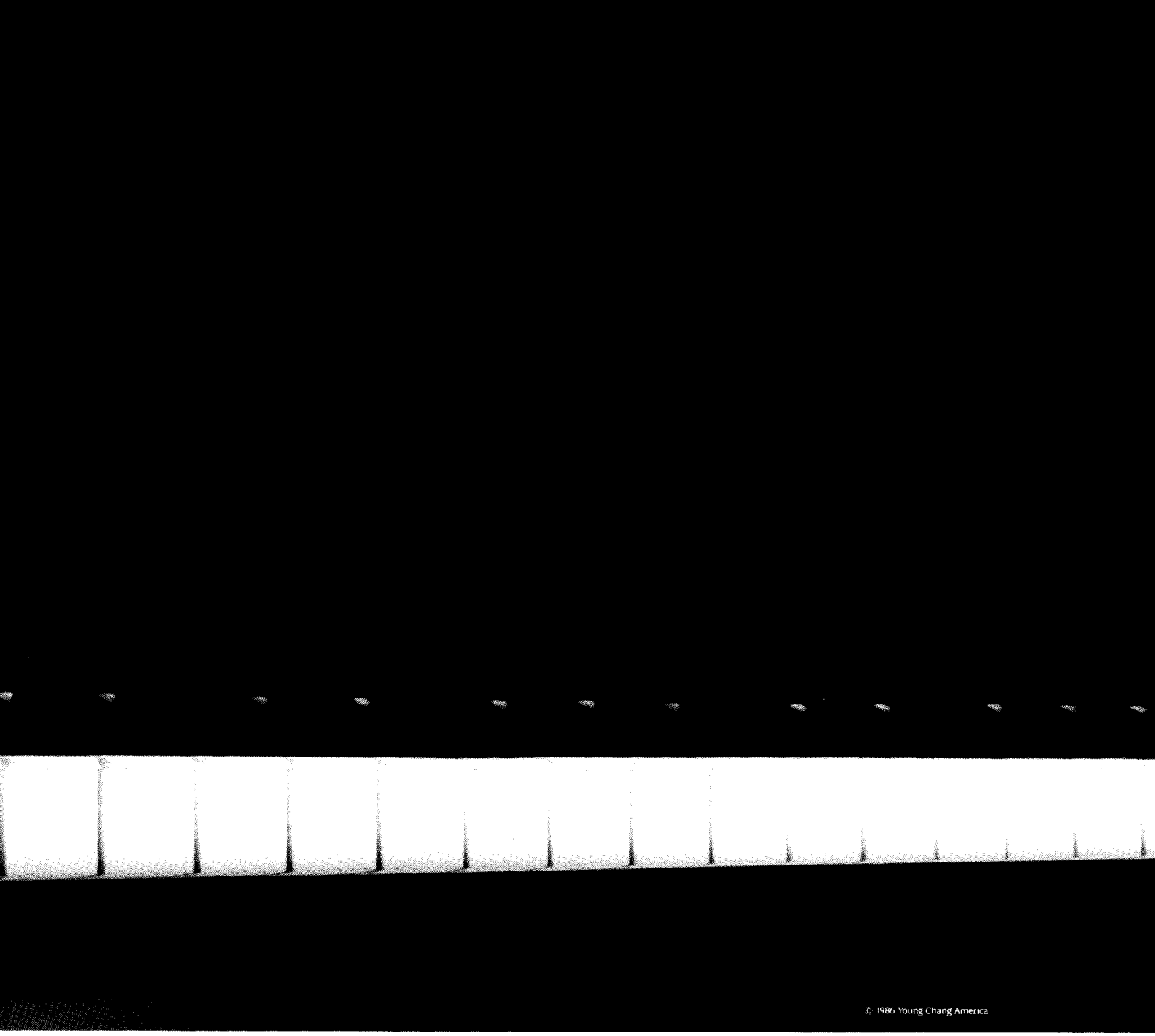

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The President's Perspective

Charles P. Huether
President

Summer: Not Necessarily Slow

The Fourth of July is summer in earnest. Back where I live we will be ushering in the month with an extraordinary celebration. This year we will be rededicating the Statue of Liberty in New York Harbor. I have to assume that you heard about the restoration of the Statue which has been going on for the past few years. After the three-day extravaganza in celebration everything else will be anticlimatic.

Except for piano technicians. We still can look forward to our annual Convention and Institute being held later in the month in Las Vegas.

Our annual meeting is held in July because it has been generally assumed that that is the slowest month of the year in our business. Like all assumptions, it is not always correct. There are many of our members and fellow technicians who find July and August busy months. They are those who work for school systems, colleges and other educational institutions, summer festivals and music camps and those who plan to be busy by blocking out those months for special jobs which customers would not be interested in at other times of the year, work which can only be done when customers can release the piano for repair for extended periods of time.

There really is no period of time when our work need slow down. If one is inventive, aggressive and determined, one can manage to keep fully occupied all months of the year. The problem sometimes is to reserve a time for doing no work.

Because work can sometimes be sporadic and there can be lulls which are not anticipated, we often develop an insecurity which keeps us from blocking out free time for that very necessary vacation. We are not willing to postpone a job or turn one down when we should be resting or relaxing.

The notion that time off is just as important as time on the job is hard to accept when things are slow. To achieve the necessary luxury of time off to relax requires planning, not reliance on fate. This is where some help from business classes and organization can be of great help. In our determination to become the best craft people in our field we sometimes overlook the fact that we can be the most skillful but also the least successful for skill has nothing to do with running your business in a realistic way. That requires organization and business accumen.

Speaking of time off....I will be doing just that with this message, my last. I wish to thank all those who have taken the time to tell me that they have been reading my articles and enjoying them. I have enjoyed writing them.

It has been my pleasure these past years serving on the Piano Technicians Guild Board to visit different parts of the country, to meet and speak to many of our members. That, above all, has been the greatest reward of office. The work of serving the Guild has been exciting, stimulating and educational, as well as time-consuming and sometimes frustrating. On balance it has been mostly rewarding and I wish to thank all for having had this opportunity to serve.

In closing I would like to leave this message with you: Our organization derives its existence and strength from its chapters, who in turn survive because there are dedicated people willing to work. We will survive and grow as long as there are willing volunteers to do the work, who retain its special spirit and enthusiasm. Don't just sit back and expect things to happen. Be a part of it by working in your chapter, helping it grow in excitement and interest. To paraphrase a well known TV commercial: "We can't live without you."

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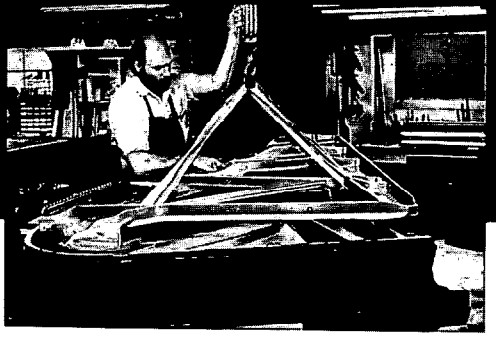

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From The Executive Director

Barbara Parks
Executive Director

Your 'Edge' In The Business

Things may be easing a bit in the piano industry. Mind you, no one is breaking out the champagne yet, but one or two industry figures have been seen cautiously trying on a smile when they thought nobody was looking.

The National Association of Music Merchants recently reported that piano sales in April of 1986 were up 10 percent over sales a year ago. This is the eighth straight month that piano sales have increased over last year, NAMM's *Business Barometer* said. Total music industry sales were up seven percent. Those statistics echo the comments of at least some of the piano industry participants at the NAMM Winter Market in Anaheim last January, and those preparing for the Summer Expo in Chicago are optimistic as well.

What does it mean for the service end of the industry? It's more difficult to come up with hard, meaningful figures there, but there is one hopeful indicator. Registrations for this month's Convention and Technical Institute in Las Vegas are showing a solid response, at times even matching last year's record-setting pace.

That means one of two things: either technicians are planning to attend because business is improved and they are better able to afford it, or they're planning to attend because these are competitive times and they want the "edge" that additional training can give them.

It's also significant that Institute Director Ben McKlveen's schedule includes some classes in such non-technical areas as business management, customer relations and computers. And the instructors in these classes are not "experts" from other industries who draw generalizations and weak parallels from their somewhat-related experiences. These instructors are people who know the technician's business from the inside, with all its special needs and challenges.

The Institute classes, and the Piano Technicians Guild as a whole, are a technician's edge in the business. By virtue of their special skills, training and dedication, Registered Technicians are something special and the best of those, the ones who conduct classes at Institutes, seminars and chapter technicals, are the best possible people to learn from.

So take a look at the classes listed in this issue. By planning your week in Las Vegas carefully, you will be able to increase your value to your clients. You will be able to manage your business more effectively. You will make contacts that will help you throughout your career. And you will be helping to build something important — a stronger Guild of piano technicians.

And that is quite an edge.

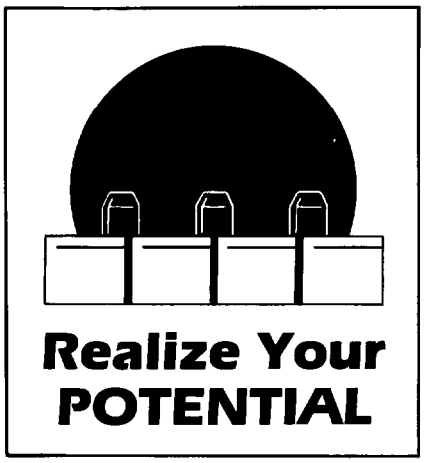
1986 Technical Institute Classes And Instructors

TUNING

The Fine Art of Tuning — *William Stegeman*
Aural and Visual Tuning — *James Coleman and George Defebaugh (Kawai)*
A Master Class in Tuning *Bill Garlick (Steinway)*
Raising Pitch Without Pain — *Dr. Albert Sanderson (Inventronics, Inc.)*
On Pitch — *Rick Baldassin*

KEYBOARDS AND ACTIONS

Action Analysis Practice and Theory — *Gary Green (Sohmer-Pratt Read)*
Grand Action Rebuilding — *Willis and Dave Snyder*
Grand Regulation — *Kimball Factory Team*
Regulating the Vertical Piano — *Wurlitzer Factory Team*



Servicing the Steinway Grand *Bill Garlick and the Steinway Team*
Voicing — *Bill Brandom and the Yamaha Team*
From the Middle Up — *Norman Neblett*
Key Weights and Touch Control — *David Betts*
Troubleshooting — *Ernie Juhn*
Servicing the Bosendorfer — *Ray Reuter (Kimball International)*
Preparing the Piano for a Concert — *Wendell Eaton and Rick Butler*

REBUILDING AND REPAIRS

Rebuilding Seminar — *Wally Brooks, Director*
Soundboard Repair and Pinblock Installation — *Cliff and Tony Geers*
All About Hammers — *Sally Jameson (Baldwin)*
Professional Finishing — *Webb Phillips*
Upright Damper and Hammer Installation — *Priscilla Rappaport*
Sharpening the Tools of the Trade — *Joel Rappaport*
Vertical Piano Rebuilding — *Raye McCall*

Continued on page 11

Participants in Priscilla Rappaport's "Upright Hammer And Damper Installation (A Factory Method)" class will get hands-on experience using action models representing one octave of a piano. Participants should be familiar with basic upright regulation. Attendance is limited, and those planning to attend must bring the following tools as shown above: one small screwdriver, approximately 3/16" blade width; one medium screwdriver, 1/4"-5/16" blade width; parallel pliers; wire-bending pliers; backcheck regulation tool; tweezers; and a flat bastard wood file, 10"-12" long.

Institute Staff

Ben McKlveen
Institute Director
Dick Bittinger
Assistant Director
Ernie Juhn
Assistant Director

Institute Schedule

Tuesday — Thursday

Period 1: 8 - 9:30 a.m.
Period 2: 10:30 a.m. - noon
Period 3: 1:30 - 3 p.m.
Period 4: 4 - 5:30 p.m.

Friday

Period 1: 8 - 9:30 a.m.
Period 2: 10 - 11:30 a.m.

Convention Schedule

Saturday, July 19
Registration open *2 - 6 p.m.*
Pre-Council Delegate Meeting *7 - 10 p.m.*

Sunday, July 20
Registration open *8 a.m. - 6 p.m.*
Council Session *9 a.m. - 5 p.m.*

Monday, July 21
Registration open *7 a.m. - 6 p.m.*
Council Session *10 a.m. - 6 p.m.*
Regional Caucuses *1:15 - 2:15 p.m.*
Exhibits open *2 - 6 p.m.*
Opening Assembly *7:30 - 9 p.m.*
Baldwin Reception *9 p.m.*

Tuesday, July 22
Registration open *7 a.m. - 6 p.m.*
Institute classes *8 a.m. - 5:30 p.m.*
Exhibits *9:15 a.m. - 1:30 p.m.; 2:45 - 6:15 p.m. (Membership Booth and Store open)*
Regional meetings *5:45 p.m.*

Wednesday, July 23
Registration open *7 a.m. - 6 p.m.*
Chapter President's Symposium *8 a.m.*
Institute classes *8 a.m. - 5:30 p.m.*
Exhibits *9:15 a.m. - 1:30 p.m.; 2:45 - 6:15 p.m. (Membership Booth and Store open)*
Auxiliary Tour *10 a.m. - 4 p.m.*
Steinway Social Hour *6:30 - 7:30 p.m.*
Convention Banquet *7:30 p.m.*
Yamaha Party *9 p.m.*

Thursday, July 24
Information Desk open *7 a.m. - 6 p.m.*
Institute Classes *8 a.m. - 5:30 p.m.*
Exhibits *9:15 a.m. - 1:30 p.m.; 2:45 - 6:15 p.m. (Membership Booth and Store open)*
Theatre Under The Stars at Spring Valley Ranch ("Li'l Abner") *Buses leave at 5:45 p.m.*

Friday, July 25
Information Desk open *7 a.m. - noon*
Institute Classes *8 a.m. - 11:30 a.m.*
Closing Luncheon *12:30 - 2 p.m.*

Mini-Technicals — A Lot Of Information In A Little Time

Directed By Bob Russell

Tuesday, July 22

Period 3

1:30 Replace Lower Tenor Strings (Walt Sierota)
2:00 *New* gadgets and Tools (Francis Mehaffey)
2:30 Now That You Know How to Tune (John Lillico)

Period 4

4:00 Soundboard Varnish Finish (Susan Graham)
4:30 From the Strings Back (Kevin Leary)
5:00 Unrepairable Parts (Ernest Dege)

Wednesday, July 23

Period 3

1:30 Small Claims Court (Sid Stone)
2:00 Control the Paperwork (Larry Crabb)
2:30 Upright Evaluation (Vivian Brooks)

Period 4

4:00 Hammer Technique (Leon Levitch)
4:30 Bass Tuning (Steve Hornbeck)
5:00 Simplified Stretch Tuning (Erroll Crowl)

Thursday, July 24

Period 3

1:30 Structural Tuning (Paul Monroe)
2:00 True or False Beats (Ray Chandler)
2:30 Do It Easier (Colette Collier)

Period 4

4:00 Shank and Butt Repair in the Home (John Bloch)
4:30 Balance Rail Repair (Ralph Onesti)
5:00 Close Encounters of the Right Kind (Don Morton)

Friday, July 25

Period 1

8:00 Piano Rentals (Raye McCall)
8:30 Piano Rental Business (Ron Kistler)
9:00 Fix It in the Piano (Ernie Preuitt)

Period 2

10:30 Troubleshooting (Dick Bittinger)
11:00 Prepare and Finish Plates (Danny Boone)
11:30 Key Bushing (Bob Smit)

Caesars Palace will be the site of the 1986 Convention and Institute.

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Institute Classes . . .

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Shop Efficiency — *Clair Davies*
Woodworking for Technicians — *Jack Krefting*
Wood Behavior — *George Wheeler and Webb Phillips*

PLAYER PIANOS

Player Piano Forum — *Norman Heischober*
Troubleshooting for the Advanced Player Technician — *Norman Heischober*

ALLIED ARTS

The Facts About Woven Felts — *Peter Van Stratum (Chas. House)*
Keep It Stable — *Allen Foote (Dampp-Chaser)*
Let's Keep The Profit — *Ron Kistler*
Tuning Pianos and Their Owners — *Tom Cobble*
The Computer as a Business Tool — *Jon Allen and Mark Anderson (Mgr. Software Systems)*
The Computer in the Life of the Piano Technician — *Newton Hunt*
Mini-Technicals — *Bob Russell, Director*

This year's Institute schedule includes more than 200 hours of top-notch classroom instruction.

The International Scene

Fred Odenheimer
Chairman, International Relations Committee

Travels In Europe

BREMGARTEN, SWITZERLAND (May 10, 1986) — It is hard to believe that we are on our way already for two weeks, having left Los Angeles April 27. We have been busy ever since. After our flight to Frankfurt we proceeded to Freiburg, where I naturally wanted to look up Matthias Stockle and Johannes Ruoss, the two young men from Germany who gave us such a nice program at our convention in Kansas City.

It just so happened that I caught Matthias before he left Freiburg for a very promising job, namely starting a branch for a very prominent piano and music house. We spent a wonderful evening together with dinner before he left that same night. Unfortunately, Ruoss was not there, having had an accident with a saw which fortunately left his fingers intact. We stayed in Zurich for a few days where I contacted Herr Grossenbacher, president of Europiano. He was going to go to the convention of the BDK (Bund Deutscher Klavierstimmer) for two days in Marktoberdorf, Bavaria, and he asked me if I would join him. One cannot say no when there is a chance to meet people one has met before, see things and learn. Thus we left Zurich May 8 for Marktoberdorf, where the convention was held in an old castle now turned into a music school. Indeed, I met some friends from former years and, to my surprise, Joel and Priscilla Rappaport.

May 9 was a day of travel by bus to Scharnitz, Austria, where the group of convention participants visited the saw mill of Gebruder Fuchs, founded in 1779, which is still in the hands of the family of the original founders. It was an interesting experience since this company not only prepares boards ready to assemble for piano soundboards, but also makes parts for violins and the violin family, guitars and other music instruments that require soundboards. They also manufacture veneer which is cut with a huge knife nearly paper-thin.

From there the trip took us to Mittenwald and a visit to the Violin Museum with many old and newer instruments assembled there on exhibit. In the evening I attended the business meeting of the BDK with one of the high points being awards given to winners of this year's tuning contest.

This morning we visited some classes on soundboard repairs and making of bass strings, the latter conducted by Paul Stockle, father of Matthias. While both classes were excellent, I had to admire Mr. Stockle and to note what a wonderful and patient teacher he is. Naturally his two sons were there, also Johannes Ruoss, with two fingers still taped, and Klaus Fenner, who gave a class on scaling.

There were 131 active participants at the convention out of a membership of 450, mostly young people eager to learn. The local paper carried an excellent article about the convention. Europiano now has a total membership of 1,100 to 1,200 and naturally the BDK is also part of that organization. Now we are looking forward to meeting the group of Piano Technicians Guild travelers in Braunschweig after spending a few days with the Fenners.

THE TECHNICAL FORUM

Grand Rebuilding, Tips For Apprentices Historical Pitch Standards, Hammers Caught Below Hammerline Tech Tips, And The Dumb Sales Claim Contest

Jack Krefting
Technical Editor

Since the conclusion of our Forum series on Vertical Rebuilding a year and a half ago, we have had a number of requests for a similar series on grands. Our resistance to diving right in was partly due to a certain reluctance to make the commitment to seeing a long project all the way through, and partly because of the way such a major topic tends to dominate the Forum to the exclusion of other things. That would be of particular concern to those who have little or no interest in rebuilding and may feel that the Forum should maintain a middle-of-the-road stance among the interests of all the membership. It is a persuasive argument.

In the meantime, we continue to hear of a need for more basic information on piano technology in general, on a level which would be suitable for the apprentice technician. So we are being pulled in three different directions at once, having decided on a compromise, at least tentatively. If you don't like the new format, please let us know.

In an effort to please everyone, which of course won't work, we are going to start a series on grand rebuilding *and* a series of apprentice-level tips; but to keep them from dominating the Forum, both will be displayed in sidebar fashion to differentiate them from the main body copy which will continue to take questions, comments and tech tips.

Historical Pitch Standards

Harvey Roehl of the Vestal Press, Vestal, NY, has kindly sent in a copy of an old manual, *A Practical Treatise on Tuning and Repairing the Piano-Forte* by Howard W. Pyle. While much of the text deals with square regulating and repairs, it also contains the fascinating account, perceived by Pyle in 1906, of the late-19th-century pitch wars, which we reprint here:

In 1828, Sir George Smart caused to be constructed a fork A = 433.2, as the standard of the Philharmonic Society, and began immediately to create a name and distinctive place for himself by raising the standard of the Philharmonic pitch until it reached the enormous elevation of A = 454.7, where it has remained with only slight variations.

The pitch of the English military bands is fixed by the Queen's regulation in the following language:

"In order to insure uniformity throughout regimental bands of the service, the instruments are to be of the same pitch as that adopted by the Philharmonic Society."

The English Government appointed a committee consisting of the late Dr. A.J. Ellis and A.J. Hipkins to determine that pitch, who fixed upon A = 452.5 and tuned a fork representing the same. Upon the death of Mr. Ellis, the Government placed in the hands of Mr. Hipkins the important matter of the preservation of that standard, who caused to be constructed suitable standard forks.

Upon the continent of Europe; where they had been for nearly 200 years in possession of a tolerably uniform pitch, the year 1814 ushered in a change; it was that year when the crowned heads of Europe assembled in that notable and now historic congress of Vienna.

The Emperor of Russia presented to the brass band of one of the Austrian regiments, of which he was the honorary colonel, a new set of instruments. As he marched in review at the head of his regiment, it was noticed that the band was upon a much higher pitch; it was learned that the instruments had been made much sharper than any other instruments previously in use. One of the Austrian Grand Dukes, not to be outdone, presented one of the three

household regiments of Austria another set of instruments that were still sharper.

The two opera houses of Vienna were dependent upon the military bands and the confusion that here began resulted in the raising of the pitch of the orchestra at the opera at Vienna.

It was the beginning of the confusion, and of the slow but certain raise, through great difficulties (for the people of that day were a tenacious people), which crept slowly westward permeating many localities, reaching into France and England, influencing Sir George Smart in London in adopting the pitch he did adopt, and was completed only when Sir Michael Costa attempted to climb the heights of fame by first sending the pitch heavenward, to be obliged in the cold and dreary month of February, in the very middle of the concert, when the pitch of his orchestra, by the rising temperature of the room, had completely run away with him, to stop his concert, arrest the pitch, retune his instruments and begin again.

The ultimate result was to cause the pitch of the orchestra to be fixed at A = 452.5.

A paper of historic importance upon this subject was written by Messrs. Cross and Miller, given an account of the condition of musical pitch in Boston and vicinity in the year 1880.

At that time, there existed in that city more than thirty standards of pitch, reaching from Koenig's physical pitch of C = 256.1 to that of the New York pitch of C = 273.9

Of all the forks in use in Boston and vicinity, quite likely the standard fork of Chickering & Sons, giving C = 268.5, is the most important and has had during the last quarter of a century more influence upon the musical pitch of Boston than any other fork.

From it, Mason & Hamlin copied their fork, and George Woods copied his from Mason & Hamlin's, and from these forks other manufacturers of Boston have very largely obtained their standards, save the Smiths, who copied theirs from the Opera, 1866.

We find the forks representing the pitch of Steinway, Weber and others, at about the same period, based upon the oboe, then in use by the Philharmonic Society, C = 270, and around them there is grouped a large and distinctive circle of manufacturers.

Messrs. Steinway possess a higher fork, viz.: C = 272.2 and A = 455.9, which would be higher than that of the Philharmonic Society of London under Sir Michael Costa.

There also prevails in New York a still higher fork of C = 274; in Baltimore, A = 456.1; in Philadelphia, C = 547.8; in Bridgeport, A = 458.1.

If we go to the reed organ manufacturers, we shall find the Messrs. Estey for many years using C = 261. We also find Mason & Hamlin, of Boston, using C = 259 after the first introduction of the great organ at the Music Hall in that city, and then returning to the pitch taken from the Chickering fork.

"

It was the beginning of the confusion, and of the slow but certain raise...which crept slowly westward...and was completed only when Sir Michael Costa attempted to climb the heights of fame by first sending the pitch heavenward, to be obliged in the cold and dreary month of February, in the very middle of the concert, when the pitch of his orchestra, by the rising temperature of the room, had completely run away with him, to stop his concert, arrest the pitch, retune his instruments and begin again.

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If we examine into the pipe organ manufacturers of the country, we find great care has been exercised, and low pitch has largely prevailed. There is one manufacturer who furnished a list of 279 pipe organs tuned from A = 435, and all of the pipe organ manufacturers of today stand substantially upon this pitch.

The artists of the world ever made protest against the rise in pitch. At Vienna where it reached as high as A = 456.1, being three-quarters of a tone higher than that of Mozart, artists refused to go to the stage. At Paris, Madam Branshu refused to go upon the platform. In 1857 and 1858 an alarm took place causing such a fright that singers refused to appear upon the stage unless the pitch was lowered. This mania spread through Europe, first at Vienna and then at the French Opera in Paris, where A had reached 448; artists rebelled, and the musical world came to their rescue, consternation took the form of a panic. An appeal was made to the French Government, who appointed a commission to investigate the whole subject, who reported in 1859 in favor of A = 870 single vibrations in a second, resulting in a decree on Feb. 16, 1859, establishing that rate as a standard for France.

When Richard Wagner went to London in 1877 to preside over the greatest festival that he had ever given in England, he found the pitch of the orchestra had gone to A = 455.1 and made a serious protest, finding extreme difficulty in conducting on that occasion.

In 1879, Madam Patti entered her protest and refused to sing without the lowering of the pitch. In the same year, Madam Nilsson entered a protest.

In 1860, the Russian Government ordered the national orchestra to reduce the pitch to A = 870 single vibrations; but little progress, however, was made in an official way, except by two or three of the smaller states, until 1885, when, upon the petition of those interested in the subject at Vienna, the Austrian Government called together an important congress, at which the Governments of Russia, Germany, Italy and many other states were represented, and resulted in the decision of the commission recommending the adoption as an international pitch of A = 870 single vibrations.

In 1885, the New York Philharmonic Society adopted A = 435 as the standard pitch of that orchestra. The Symphony Orchestra of Boston adopted the same.

The National Music Teachers' Association passed this resolution in 1889:

Resolved: *That all pianos not tuned to A = 435 be excluded from the concerts of this Association.*

The adhesion of the American College of Musicians is also assured.

The National League of Musicians, which has its important locals in 48 cities of this nation, controlling 12,000 musicians, has adopted the low pitch A = 435.

In order to show how the pitch has varied in the past in the absence of a standard, we add the following list:

C FORKS

	C4 Fork
Roosevelt Organ Works, New York	**516.8**
J.H. & C.S. Odell, New York	**520.6**
J.H. Foote, New York	**535.4**
Geo. Steck & Co., New York	**539.5**
Wm. E. Wheelock & Co., New York	**539.6**
Decker Bros., New York	**539.9**
Estey Piano Co., New York	**540**
R.M. Bent & Co., New York	**540.1**
Mehlin & Sons, New York	**540.2**
Pease Piano Co., New York	**540.4**
Newby & Evans, New York	**542.3**
Hazleton Bros., New York	**542.3**
Decker & Son, New York	**537.7**
Mason & Hamlin, Boston	**537.7**
C.C. Briggs & Co., Boston	**537.7**
Vose & Sons, Boston	**537.8**

McPhail Piano Co., Boston	538.6
Chickering & Sons, Boston	538.8
Chickering & Sons (low)	521.2
C.B. Snyder, Winfield, KS	518.4
Jewett & Co., Leominster, MA	533
Gallup & Metzger, Hartford, CT	534.5
Sheninger, O. & P. Co., New Haven, CT	534.5
Boardman & Gray, Albany, NY	539.5
Leicester Piano Co., Leominster, MA	550.9
Estey Organ Co., Brattleboro, VT	517.3
Estey Organ Co., Brattleboro, VT	522
Estey Organ Co., Brattleboro, VT	540
Knabe & Co., Baltimore, MD	508.8
Knabe & Co., Baltimore, MD	541.3
Wilcox & White Organ Co., W. Meriden, CT	532.6
Lester Piano Co., Philadelphia, PA	547.8
Clough & Warren Organ Co., Detroit, MI	538.6
Atlanta Piano Co., Atlanta, GA	539.1
A.B.Chase Piano Co., Norwalk OH	540.8
Sherman, Clay & Co., San Francisco, CA	545.4
J. & C. Fisher, New York	526.2
Frances Bacon, New York	536.4
Albert Weber, New York	537.5
Benning & Sons, New York	538.1
Behr Bros., New York	540
Coniver Bros., New York	542.8

A FORKS

Mason & Hamlin, Boston	A3 Fork 435
Mason & Hamlin, Boston	439
J. H. Foote, New York	449.5
Chas. M. Steiff, Baltimore, MD	456.1
P. Werlein, New Orleans, LA	431.8

Hammers Caught Below Hammerline

Q: *I suspect the problem I am having has been discussed before in the* Journal, *but I can't seem to find it. What is happening is the hammers of many of the older Steinway grands at the university I work for drop below the hammerline and get stuck on the backcheck. This seems most likely to happen on a firm blow. These pianos have teflon bushings, which are worn. Is the problem in the teflon bushings? I have never had this problem in a piano without teflon busings.*

Is there a way to rebush a Steinway grand action that is equipped with teflon in the traditional way, with cloth bushings? Several of the concert grand actions need to be repinned, rebushed or both.

Incidentally, a previous technician took care of the problem of hammers dropping below normal level by gluing treble damper felt on the rest pads so the hammers could not drop too low and get stuck. This is a solution I did not like when I first started working here a few months ago. Now the hammers are resting on the damper felt when the blow distance is correct. But at least this solution makes the piano reliable again, no small consideration in any situation, but especially important in a university music department!

A: Unless we are overlooking something, this appears to be simply a regulating problem caused either by repetition springs that are too weak, or by a combination of weak springs and tight centers in the jacks and/or in the repetition levers. We don't think this problem has anything to do with the teflon, in any case.

Check for a consistently quick, smooth rise of the hammer when key pressure is eased after a held note; our guess is that the springs are so weak the hammers won't rise at all, in which case they should be strengthened and tested again. Remove the added damper felt from the rest cushions, reregulate the entire action, and that should take care of it.

If the hammers *are* rising, they probably aren't doing so consistently because someone has overstrenthened the springs to com-

Grand Rebuilding

To be financially successful, the rebuilder must be aware of all of his costs and base his prices on a cost-plus-profit analysis. Failure to make every job pay its share of the overhead results in the planned profit being eaten up by hidden overhead costs — that unexpected expense of replacing a jointer or a bandsaw, for example — so the rebuilder ends up working merely for his labor rate. Face it, if you aren't going to realize a profit in addition to your labor rate, you might as well work for someone else and avoid taking the risk and responsibility of running a business. If you *are* taking on those headaches, they should be paid for somehow.

To simplify this, we will break the costs down into just four categories: labor, materials, overhead and profit. We'll start with labor, since that is invariably the greatest cost.

Average Labor Costs

Hourly Labor Rate

Man-hours required	$5	$10	$15	$20	$25	$30	$35	$40
100	$500	1,000	1,500	2,000	2,500	3,000	3,500	4,000
150	750	1,500	2,250	3,000	3,750	4,500	5,250	6,000
200	1,000	2,000	3,000	4,000	5,000	6,000	7,000	8,000
250	1,250	2,500	3,750	5,000	6,250	7,500	8,750	10,000

That certainly seems simple enough, but how many of us know how many hours are required to rebuild a piano? And if some of the labor is written off at a low rate because it is being performed by a low-paid employee, how much of the rebuilder's own valuable time is used to train that person, and to inspect and supervise that work? If you have more than one or two people working for you who require supervision and/or training, you will get very little work done yourself, so your own labor rate must be figured in along with their labor rates on that particular job. This is a sort of "labor overhead" that represents one of the biggest hidden costs of the larger shops, but must be figured in any situation where the principal technician is distracted from work by the need to train or supervise others.

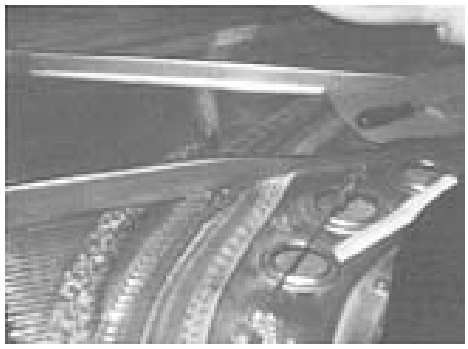
Tips
For Apprentices

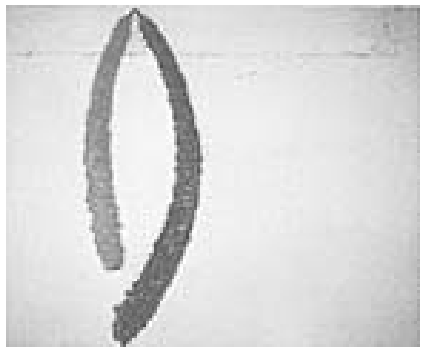
A Good Choice...

The aluminum key bushing cauls which have come onto the market in the past few years are excellent and well worth the extra cost. Used as directed, they produce far better results than the old wooden wedges or the steel spring clamps also sold for that purpose.

And A Poor One

Soundboard toggles, readily available at supply houses, are not only not very effective, but also cause irreparable damage to a soundboard assembly. Installation requires the drilling of a 1/4-inch hole through the rib(!) and the soundboard, the forcing of a slightly-larger toggle through the hole, after which the pivoting toggle digs an ugly gash into the bridge side of the board. A washer and nut are added on the rib side, eventually to loosen and add a buzz of their own. Technicians should not assume that such devices can be legitimately used to repair pianos simply because they are available from legitimate suppliers.





pensate for tight centers or trapped springs. Check the torque on all centers, check the full length of each spring for excessive friction, and be sure the jack tips are smooth and at the correct height.

Regarding the possibility of rebushing teflon Steinways with cloth, unfortunately it can't be done because those actions had no birdseyes to control end play, and all but the earliest models have too large a hole to accept a cloth bushing anyway. If the university intends to keep these instruments in service for several more years, we would suggest replacing the action parts with the new cloth-bushed parts whenever that is convenient, such as the next time the hammers will be replaced. If the pianos will be replaced soon, anyway, then repin and regulate the teflon parts as required for good performance. If you don't already have one of the Steinway teflon kits, by all means order one from the manufacturer.

Tech Tips

Peter C. Briant of Great Falls, MT, sent in the accompanying photos to illustrate his use of "stuffits" — moisture absorbers for woodwind instruments — for cleaning soundboards. Peter suggests attaching two of them together with player tubing and working them under the strings with a screwdriver, its end taped to avoid scratching the board.

Briant also suggests "iron-on" veneer for field repairs such as broken keys. The veneer is prepared by spreading an even, thin coat of Titebond with an index card all over one side. When the glue dries, the veneer can be carried around without mess or trouble until needed. Cut an appropriate-sized piece for each side of the broken key, apply with heat, and clamp briefly. According to Peter, the glue sets quickly so the key can be sanded and used only minutes after the repair has been made.

DSC Contest

This month's Dumbest Sales Claim was submitted by Gary Nelms of Mercer, PA:

The purchaser of this piano told me that the ex-owner had the whole case shipped to England so that the plate could be weighted so the piano would sound like a concert grand. I haven't seen it, but am told that the piano measures under five feet in length! Try to get around that *without making the owner feel bad...*

To conclude this month's forum, we regretfully must announce that the article by Susan Graham that appears in this issue will be the last one she will write for us, for a while at least. Susan wants to take about a year off from the writing, and we can't blame her for that, but we'll sure miss her excellent work nonetheless. Thanks, Susan, for a job well done!

Please send all technical material for publication to me at this address:

Jack Krefting
PO Box 16066
Ludlow, KY 41016

The I-Hate-To-Tune Tuning — Part II

Susan Graham
San Francisco Chapter

I continue with this article, but not with a claim to be an expert. A number of technicians teach fine classes and write excellent articles about tuning, and do so with far more detail and precision than offered here. I'm not writing about "concert" tuning (a veteran like me doesn't wander into the minefield of what makes a concert tuning different from other tuning...) nor is this a detailed how-to piece. This is a compendium of suggestions derived from the experience of a basic practicing tuner, aimed at similar types who may find them useful.

I should also remark that the fact that I'm an ear tuner is not a reflection of bias, rather one of habit and convenience. When I learned to tune the machines available and the understanding of their use was not very sophisticated. It was far more acceptable among both tuners and the public for a piano to be tuned by ear.

This has changed enormously, but I'm something of a stick-in-the-mud, and I always want some other piece of equipment more than a "box" — so I continue to tune by ear, and the electronic tuners will have to forgive me if there isn't much here for them.

All that aside, where was I? The previous section of this article covered preparation through tightening plate bolts, lubricating bearing points, wire settling, etc. In the actual tuning (as with most things) the most effective way to accomplish a task is to set specific goals and work toward them, so let's consider what elements make up a good tuning. Those I find most critical are stability/pitch, adequate stretch of octaves, and good unisons. This article continues with a discussion of these elements, why each is important and how it can be achieved.

"The best tuning in the world has little use if it doesn't hold. Further, an unstable piano (or poor tuning technique) makes tuning so laborious that it becomes a battle rather than a cooperative venture between tuner and piano."

Stability and pitch: The importance of these speaks for itself. The best tuning in the world has little use if it doesn't hold. Further, an unstable piano (or poor tuning technique) makes tuning so laborious that it becomes a battle rather than a cooperative venture between tuner and piano. Pitch is extremely important, but is interrelated with stability, and a well-intentioned attempt to tune to A440 is the cause of many an unstable tuning. When pitch is raised or lowered more than very slightly, stresses on the structural members change: bridges tip and rollercoaster, the soundboard undergoes increased or lessened downpressure, the plate flexes or

relaxes and the case shifts. The instrument is unsettled and will readjust. Add to this the behavior of the wire itself, tending as it does to hang up at bearing points, and the factor of possible tuning pin twist, and it is not surprising that even a slight pitch change yields a less stable tuning.

The balancing factor is, of course, that (modern) pianos are designed to be at A440, and often have noticeably better resonance at that pitch. Since A440 is the pitch standard, part of the value of a piano is that it be at that pitch, and it is unconscionable for tuners to allow instruments to slip flatter and flatter simply through being too lazy or rushed to do a little extra work just once. Obviously, for recording studios, concert halls and other professional uses, it is vital that pianos be at A440 (for purposes of brevity, I'll ignore the current, rather deplorable, desire of some groups to tune to higher pitches).

Pitch is important, and if a piano isn't at A440 I don't really consider it to be in tune, but the fact is that if a piano undergoes more than a very slight pitch change, it will need to be tuned twice to produce an acceptable degree of stability, and even so will not hold as well as if it were right at pitch even before tuning is initiated. Simply put, the more the pitch is changed, the less it's going to hold, and that's life.

So, how much is slightly? At A440, eight cents off (in either direction) will require an initial pitch change tuning (this translates to roughly two beats against the fork). The first tuning should start from an A (or C) which is one-third as much to the other side of the fork. In other words, if the piano is 10 cents flat, it should be pulled 3 1/3 cents sharp on the first tuning. It will then settle and can be fairly well tuned at A440 on a second go-round. This is the rule of thumb, but it is rarely so simple, and I think skill in rough or pre-tuning pianos is one of the great benefits of experience.

In practice, I find myself going through most tunings twice, especially the first time I see a piano. It's less tiring and yields a better job than it does to sit and labor over every note while the preceding ones are already wandering...

"

Some pianos fool you. They match the fork in midrange, but are off in the extreme. These I tune more carefully in the middle, but the sections which are off are treated like a pitch-change.

"

The first tuning is very quick — not more than 20 minutes unless there's rust or string breakage slowing me down (always lower the string a tick before pulling it up to be sure it's broken free at the bearing points). I strip-mute the entire instrument, do the preliminary tightening, lubricating and settling (unless the piano is sharp, in which case I eliminate the settling at the capo since this could ultimately result in a bend in the speaking length). I set a temperament of reasonable accuracy, and zoom through the tuning as quickly as I can. I tune by octaves as usual, but use just the minor third-major sixth test in the bass and aim for clean fifths in the treble. These are both "one-hand" tests and can be done without releasing the tuning hammer.

Once or twice in a section I check double octaves. I follow my normal sequence: temperament, bass octaves, treble octaves, bass unisons, recheck treble octaves, treble unisons. Experience teaches us that pianos tend to fall or rise in a pitch change the most at the breaks so I add a little stretch in those areas, and anywhere else my ear tells me is unusually off. I'm not very fussy about stretch at this point, just being sure not to leave the treble flat, and of getting the bass just slightly to the desirable side of pitch, to even out pressure on the soundboard and bridges. Wound strings should be pulled above pitch with care. If the piano is very flat, pull the bass up only slightly above pitch and do it several times, rather than going a full third above. Wound strings shouldn't be overstressed. The piano will also react less in the high treble (where the bridge and soundboard are stiffer) so it isn't necessary to compensate for slippage in that area as much either.

Some pianos fool you. They match the fork in midrange, but are off in the extreme. These I tune more carefully in the middle, but the sections which are off are treated like a pitch-change. In effect, any time I find myself raising or lowering pitch enough to be aware I'm doing so, I switch gears to a quick-tuning mode, pull in the unisons, and tune again. The mid-sections which were at pitch will probably need at least some touching up, since the soundboard reacts to the change elsewhere. If the piano still seems a little unsettled, I may leave a slight overstretch in the treble octaves, particularly at the break, figuring that by the time I do the unisons and a little time passes, it's going to drop and above all else I don't want a flat treble. The point, simply re-stated, is that two tunings are more stable than one (this is particularly true of pianos with supertight pins) and it need not take much longer and will be less tiring than fighting the natural behavior of the instrument to resist change.

Uniform and adequate stretch: As mentioned, in a rough pitch change I use just minor third-major sixth tests in the bass and clean-fifths in the treble. If the piano is more near to pitch but still will require a second tuning, I'm more careful the first time around and will run tenths and check the double octaves as well. I'm still not really listening to beats but to uniformity. Before pulling in unisons, I play 12ths up and down the keyboard — also a "uniformity" test which will point out very quickly any areas of inadequate stretch.

The consensus is that the temperament is actually less important in its effect on the final

result than some other aspects of tuning, but I find that to do a good tuning it helps a lot to set a good temperament, and then tune the piano to it. This rather simplistic piece of wisdom means that a good initial pattern saves having to make compromises elsewhere, allowing the checks to truly give an indication of how accurate octave tuning is. Tuning the piano to it is a matter of using checks which refer back to the temperament itself of the notes immediately surrounding it — really using that initial pattern rather than building up successive notes without referring back to the source. Therefore, I fiddle around with a temperament if necessary to make it work well, and I use a lot of wide-interval tests to be sure of matching the piano to it as well as getting proper stretch in octaves throughout the instrument.

My usual pattern is to tune the bass first. The tenor-bass break can be tricky, especially in a smaller piano with difficult wire scaling, and I want to find the best location for those notes and perhaps shade the treble to match. It's also more practical — the bass contains fewer strings, which means less retuning if it is thrown off by subsequent treble tuning. Strip-muting the bass enables me to check back and refer to the temperament without the confusion (and/or self-deception) of faulty unisons. The principle octave test is the minor third-major sixth. (F-G♯,G♯-F beating equally). The sixth is the upper interval and is composed of already-tuned notes and the beat of the minor third quickly indicates the status of the lower note. If it is slower, the note is flat.

When beats match, the result is a 6-3 octave. This yields a nice round quality in the bass and a good clean fifth (it is a little too much stretch for most treble tuning). I check the fifths, and, as I progress, 12ths. These are "musical" tests. They don't have a specific beat pattern but are used to achieve uniformity and shading of voice. As in the treble, it is more acceptable to have too much stretch than too little, and the fifth and 12ths will quickly pick out inadequate stretch. I also run the thirds, listening for a gradually decreasing beat rate.

"

Bigger pianos want more stretch. One of the things that's so wonderful about a big grand is that a deep bass is still so musical and sets off the rest of the piano so nicely, but it is the more in-tune partials of longer strings which allow this.

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One drawback of the minor third-major sixth test, the fifth and the third is that as the tuning progresses the reference note is one which has just been tuned — and if that note is incorrect or slipping, it can build inaccuracy into the tuning even though a particular check is working. This is one reason to use the expanded intervals — 12ths, 10ths and 17ths, which refer to the temperament area. They also pick out coinciding partials in a more audible range. However, when switching from listening to thirds to listening to these expanded intervals, the beat rates will not match. It is necessary to back up at least several notes to pick up the correct series and follow it down.

Clean 12ths and gradually slowing 10ths will yield adequate stretch. Double octaves will keep you honest. I'll accept a slight roll in a double octave if this is what it takes for clean 12ths, but a distinct growl usually indicates too much stretch for that particular piano.

Bigger pianos want more stretch. One of the things that's so wonderful about a big grand is that a deep bass is still so musical and sets off the rest of the piano so nicely, but it is the more in-tune partials of longer strings which allow this.

My final test for the very low bass is what I call the weird-19th. The reference note is an octave-seventh, found by dropping a whole step below the double-octave (for instance, for F key #9 the note is D♯ key #31). In the low bass this interval yields an audible beat. The speed varies from piano to piano, but the rate should decrease as the notes descend.

In the treble, I rely on the thirds (10ths, and 17ths in upper ranges), clean fifths and 12ths and again, the double octave to keep me honest. I let the beat rate of the thirds speed up quite quickly right out of the temperament — not enough to let them scream or to yield rough octaves, but to make the piano sound better at the break. It sets a good basis for a nice clean treble without having to suddenly introduce an extremely stretched octave. The 12th will tell me how much stretch is musical; the acceptable double octave keeps it within bounds, and I use progressive smooth 10ths and 17ths to achieve those results accurately.

How about a word or two about technique? As I've said, I use a short 15-degree head and a short #3 tip. I tune verticals left-handed with the hammer at 11 to 1 o'clock, and grands right-handed with the handle at 1 to 3 o'clock (pointing away from me). Switch hitting is not difficult to learn: gradually teach your "off" hand to tune by doing a few notes in each tuning. Stability is improved and the ambidextrosity it encourages is...well, handy.

There's a mechanical advantage as well. On a vertical with tight pins I tend more toward 11 o'clock, to be lifting the pin very slightly in the hole, and pushing it around, rather than bearing down and pulling on it. Similarly on grands, I move the hammer towards 3 o'clock and am again relieving a little of the pin from the pull of the string. Ergonomically speaking, switching back and forth is also better for the back.

I'm a nudge (jerk and yank!) tuner, and a key pounder. I beat the piano from the minute I start,

not just with a test blow, but throughout the tuning. Strings seem to render better when they're in a good, strong oscillation. I don't drive the casters into the floor, or make so much noise I wear out my ears, but I keep a good steady beat (and warn the customer to expect it).

Speaking of customers, the best way I've found to ask for quiet is to do so as soon as a disturbance begins; don't wait for them to realize that they're bothering you, because they won't and you'll build up an unnecessary head of steam. Go to them and simply say "excuse me, but I'm afraid I can't hear what I'm doing." Avoid use of the word "you," since this tends to put them on the defensive. Simply state your needs, and they'll figure out what to do. People just don't realize how differently we listen. They hear sound coming from the piano and assume that's all you need. Don't get offended — just remind them that you are there to do a specialized job and you need a special circumstance — quiet.

Last but not least, let's talk about unisons. Unisons can break you. After all, nobody's going to know to pick out the central string you spent so much time getting exactly right if the other two are twanging away. I hate checking unisons though — so I don't. I assume they all can be improved, if not to eliminate beats, then to produce a more even tone. Often I'll tune them once and restrip the piano, check the 12ths, and tune the unisons again. This sounds slow, but the time it takes to "check" each unison, isolating the offending string, inserting a wedge mute, etc., seems just as long and somehow more bothersome. I'm more likely to really do it if I reinsert the strip and run through them all without having to think. If pitch has been changed, this is absolutely necessary: wild unisons warn that things are still slipping and other intervals should be checked.

> "I'm a nudge (jerk and yank!) tuner, and a key pounder. I beat the piano from the minute I start, not just with a test blow, but throughout the tuning. Strings seem to render better when they're in a good, strong oscillation."

It's worth mentioning that it is possible to fuss over a tuning too much and build in instability, working the string. Not only are there constraints of time, earning a living and fatigue, but each time the wire is moved it is more likely to hang up somewhere. it's good to know when to quit. Quite frankly, I pluck strings in the last octave before I move them — I want to know where they are before I start messing with those fussy little bits of wire. Some pianos have a very lively (ahem) duplex which makes perceiving clean unisons difficult. A trick I learned from George Defenbaugh is to use masking tape to mute out the duplex so the unisons can be tuned, and removing the tape when the job is done. Even laying a tool roll or a rag across this area will mute it sufficiently.

Speaking of knowing when to quit, this is the time for me, not only for this particular article but for this "Shoptalk" series as well. It's been an honor to appear in the same magazine with our excellent technical editor and the other fine writers; the organization of thinking this writing has required has been very beneficial to me in my work. I hope to resume writing in a year or so, but right now, I have to get some pianos done! ■

TOOLS OF THE

TRADE

Wearing Gloves

Richard Hassig
Tri-City, IL, Chapter

I happen to believe that any blind technician doing much restringing of pianos should at least consider wearing gloves while handling the wire, tuning pins, tools and touching the plate. I am thinking of stringing a section or an entire piano, not just replacing an occasional string or two. It might be a good thing for anybody to do, but I think it is even more important for the sightless person.

Of course, body chemistry varies widely from one individual to another. Also, people perspire differently. My point is that different people's chemistry has a different effect on the metal. Some may cause a lot of corrosion and discoloration, and others may cause very little or possibly none at all. These effects may occur fairly soon or may not be apparent for some time.

You may be thinking, "But I need to have my hands and fingers free to see what is going on." That is precisely why we should wear gloves.

In the first place, since we must touch everything in order to look at it, the hands contact the wire and the plate more than for someone who can look with his or her eyes. Thus the chance of causing a problem with the metal is increased.

In the second place, although our hands are pretty good at detecting things, this problem is more difficult to detect by touch than by sight. I, for example, might not be aware there is a problem. But someone seeing my work with eyes later would surely see it if there were a problem.

In the third place, since we need our hands to look at things, it behooves us to protect these appendages from sharp wire ends and errant tools. In the unlikely event that the hammer nicks the finger or hand, it must be the tool's fault. This is one instance where we do not want to put our sweat and blood into our work.

"You may be thinking, 'But I need to have my hands and fingers free to see what is going on.' That is precisely why we should wear gloves."

Actually, it is not as difficult to work with gloves on as you might think. When first contemplating this method of working, putting the wire through the beckett was one of the things which I thought would be the most difficult to do. It turned out that this proved to be one of the easiest obstacles to overcome. I learned to judge how far from the top of the tuning pin the hole is rather than to feel for the place for the wire. If it is not on one side, it is just a quarter of a turn away. Of course this will not be true if you have a tuning pin in which the hole does not go all the way through. Yes, I have seen a few like that.

Aggraffes are another problem, but not an insurmountable one. Again, you will find it difficult to feel the hole but the location can be pinpointed by inference. It really is easier that way. Bridging and hitching are similar situations. They just are not as difficult as they might seem.

I should think that anyone doing this type of work would benefit from an efficient plan. It is necessary to change tools often. If you can work out a system so that when you need a certain tool you put your hand in a particular place and the tool is there, that has to increase efficiency a great deal. This is even more important for the sightless person. Wearing gloves makes this even more imperative. But it can be done. Don't get the idea that I consider myself an example of how this is accomplished, but I still believe it can be done. At least I keep trying.

There will be times when it becomes necessary to remove one or both of the gloves, but so be it. It is pretty difficult, for instance, to read the braille micrometer with fingers while your hand is in a glove. So you take off a glove, read the instrument, replace the glove and continue stringing.

I have gotten along pretty well with inexpensive cotton work gloves. They do not last very long, but the cost is not prohibitive. You will have to make your own choice as to type and style. If you want to use designer gloves, be my guest.

It is very satisfying to me to restring a piano of good quality, for if I do a good job the piano will most likely sound much better. As long as I am doing the work, it makes excellent sense to do a neat, good-looking job. I mean neat coils, well spaced and neat wire, even tuning pins and all that goes with it. I cannot prove that these things make the instrument sound better, but I am certain that they do not hurt the tone quality. A good-looking piece of work certainly makes a better impression. With that in mind it seems logical also to take the extra steps to keep the work clean, for that looks better also. To me that concept fits just like a glove.■

Germany's 18th Century Keyboard Builders; Gottfried Silbermann — Germany's First Piano Maker

Jack Greenfield
Chicago Chapter

The building of keyboard stringed instruments in Germany followed the trend in musical composition. Most keyboard compositions written before the middle of the 17th century were religious music composed for the organ. The building of keyboard stringed instruments remained insignificant. The aristocracy and wealthy who wanted good harpsichords imported them from other European countries whose builders made the best available instruments at the time. Around the start of the 18th century, as German and Austrian composers began to write more light and cheerful sonatas and dances to be played on the harpsichord or clavichord, keyboard instrument making began to increase in Germany.

Clavichords More Popular Than Harpsichords

Harpsichords were used in the theater, opera, large churches and palaces of the aristocracy. They were never built in large numbers because the high cost of the instrument placed it beyond the reach of most of the population. Clavichords, costing from one-fifth to half as much, were more widely used. Because of their popularity, the design of clavichords advanced the furthest in Germany.

The early clavichord was a four-octave instrument about 40 inches long. In 18th century Germany, its range was increased to five or more octaves and case size increased to 70 by 22 inches. Some elaborate instruments had casework ornamented with intricate carving and painted decorations.

The large instruments had a bright tone and did not require the use of wound strings in the bass. Many were double-strung and a few had a partial third set of strings sounding an octave higher to reinforce the lowest bass notes. In most advanced designs, there were such devices as a keyboard shift corresponding to the *una corda* shift, damper lifting mechanism (hand-operated) and an arrangement for shortening the keystroke to obtain the same effect achieved later by use of the soft pedal in an upright piano. However, the increased length of the clavichord had an objectionable result. The longer key levers gave sluggish action, difficult to play well and even the larger clavichords were much weaker in sound than any harpsichord.

"The early clavichord was a four-octave instrument about 40 inches long. In 18th century Germany, its range was increased to five or more octaves and case size increased to 70 by 22 inches."

Besides its lower cost the clavichord afforded musical capabilities such as legato playing and dynamic shading the harpsichord lacked. In 1713, Mathesson stated he considered the clavichord superior to the "always equally loud resonant harpsichord" for many types of compositions and he praised the "singing style" of the clavichord. Bach probably also had the clavichord in mind in using the term translated as "singing style" or "cantable manner" in the explanatory remarks for his Two and Three-part Inventions for Keyboard (1723). When the piano appeared in Germany during the 1730s, it provided an improvement in the esteemed qualities of the clavichord combined with louder sound and it was readily accepted. The transi-

tion was much less abrupt than the change from the brilliant, bright harpsichord to the first Cristofori pianos in Italy.

Training Of Instrument Makers

The building of keyboard stringed instruments was not as established a craft in Germany as in other countries where the builders were under the control of guilds and were guided by many years of tradition. However, organ building was a recognized profession in Germany and the German builders, in particular those of Saxony, were considered among the best of Europe. When not busy on organ construction projects, many built domestic keyboard instruments. Other builders of keyboard stringed instruments started as cabinet makers and acquired their knowledge of layout and stringing while doing case work for established instrument makers. There were also organists and other musicians who learned more or less working part-time in a shop.

Builders Of Hamburg And Saxony

Technically, the most notable instruments were those produced by builders in the Hamburg period. Hieronymus Albrecht Hass, who began his career about 1710, and his son Johann Adolph are now considered the most outstanding. The Hasses and their contemporaries centered in Hamburg made large, elaborate, highly decorated instruments in which they attempted to achieve the organ concept of tone by blending several stops. Two surviving Hass harpsichords have five registers — two-foot, four-foot, 16-foot and two eight-foot.

The only other important school of Germany keyboard instrument makers were the builders of Saxony, a small group which included members of the Silbermann family. There were also a number of other builders geographically scattered. The Saxon builders produced simpler, lighter harpsichords, often in stained pine or plain hardwood cases described by Hubbard as "inferior imitations of the Flemish as altered by the French."

Gottfried Silbermann's Background

The instrument maker responsible for the introduction of piano making in Germany was Gottfried Silbermann. Silbermann continued and passed on construction of pianos in the Cristofori design. Men he trained became prominent builders themselves and helped bring about the acceptance of the piano that came during the middle of the 18th century. Silbermann was primarily an organ builder. He also made a small number of keyboard stringed instruments, including pianos, throughout his career.

Born in 1683 in a small village in Saxony, he was the second son of Michael Silbermann, a carpenter. The first son, Andreas, was five years older. During his youth, Gottfried was a wild, unruly boy, frequently involved in mischievous pranks and practical jokes that got him into trouble with adults and local authorities of his small native village. In 1702, Gottfried left and went to Strasbourg, a city on the eastern side of France near the Rhine, where his brother Andreas had already become established as an organ builder. Andreas had started his career in Saxony working as a cabinet-maker. He then settled in Strasbourg where he obtained employment and training in building and repair of organs before establishing his own business.

In 1704, two years after Gottfried arrived in Strasbourg, he took charge of the business when Andreas went to Paris to study and work with important organ builders there. After Andreas' return in 1706, the two brothers worked as equal partners until 1710 when Gottfried went back to Saxony and opened his own shop in Freiburg, a town about 25 miles from Dresden. Andreas remained in Strasbourg for the rest of his life except for the travel necessary for his work. He built a total of 34 fine organs. Very little is known about his work on keyboard stringed instruments. He maintained a regular correspondence with Gottfried and exchanged ideas with him and other leading organ builders until his death in 1734. Two of his three sons also became prominent instrument makers.

Gottfried Silbermann's Work As An Organ Builder

Gottfried had been a talented student while working with his brother in Strasbourg and had acquired sufficient knowledge to take the responsibility for construction of several fine organs and keyboard stringed instruments on his own while there. Within a short time after his arrival back in Saxony, he began his first important projects, organs for churches in Frauenstein and Freiburg. Organ building continued to be his main interest throughout his career. He was usually involved in several projects at the same time. Many organs took three or four years for completion and he completed on an average of one organ per year.

Many considered Gottfried Silbermann the finest organ builder of his time in Europe. He had a reputation for zealous perfectionism and aggressive integrity sometimes carried to eccentric extremes. It was said he once smashed several church windows in trying to locate an offensive rattle while working on an organ. Another story was that he destroyed unsatisfactory claviers with an axe — probably untrue since he valued old seasoned wood — it was reported he accepted old wooden benches from village churches as payment for his work. He was outspoken in his personal beliefs and did not hesitate to voice his disapproval of the royal conduct he considered wrong or immoral. He remained a bachelor, highly respected and lively throughout his life.

Although construction of keyboard instruments was secondary with Silbermann, he received high praise for them from prominent musicians and contemporary writers. His fame as an organ builder and personal popularity obscured the work of the Hasses. They received very little public notice for their fine harpsichords and clavichords, now considered technically superior to Silbermann's. There are only a few surviving instruments now in museums, either authentic or more or less doubtful, credited to Gottfried Silbermann. One instrument is a spinet, dated 1723. Six existing instruments similar in design were made later by one of his nephews, Johann Heinrich Silbermann in Strasbourg. There are

Silbermann . . .

also several clavichords and harpsichords. One harpsichord is in a clear walnut case and the other is in a clear oak case. Each has natural keys of ebony and bone-topped sharps and 16-foot registers which do not appear to be original, although Silbermann may have made some instruments with 16-foot registers. One harpsichord has the initials "GS" on its music desk, the other has a symbol consisting of intertwined Ss within a triangle, a marking Silbermann used more often in spinets. The two pianos, one dated 1746, are definitely authentic. Most of the Silbermann instruments are in collections in Germany.■

Calendar Of Coming Events

Date	*Event*
★ **July 21-25, 1986**	**Piano Technicians Guild Annual Convention & Institute** Caesars Palace, Las Vegas, NV Home Office; 9140 Ward Parkway; Kansas City, MO 64114; (816) 444-3500
Sept. 19-21, 1986	**Milwaukee Days** Howard Johnsons, Milwaukee, WI Timothy C. Dixon; 2959 North 40th; Milwaukee, WI 53210
Sept. 26-28, 1986	**Florida State Seminar** St. Petersburg Beach Hilton Inn, St. Petersburg, FL Charles W. Reynolds; 4923 Suwanee Ave.; Tampa, FL 33603; (813) 237-8387
Sept. 27, 1986	**Rhode Island State Seminar** Seekonk, MA Larry M. Brown; 20 Casey Drive; Middletown, RI 02840; (401) 847-0529
Oct. 10-12, 1986	**Ohio State Conference** Wickliff, OH Kevin and Janet Leary; 18817 Hilliard; Rocky River, Oh 44116; (216) 331-5605
Oct. 16-19, 1986	**New York State Conference** New York, NY Nancy Hazzard; 1 Ruth Place; Staten Island, NY 10305; (718) 979-5154
Oct. 17-19, 1986	**Texas State Seminar** Intercontinental Airport Holiday Inn, Houston, TX James B. Kozak; 301 W. 19th St.; Houston, TX 77008
Nov. 7-9, 1986	**North Carolina State Conference** Adams Mark Hotel, Charlotte, NC Eugenia Carter; 4317 Commonwealth Ave.; Charlotte, NC 28205; (704) 568-1231
Nov. 8, 1986	**Intermountain Seminar** Brigham Young University, Provo, Utah Jack Reeves; 486 N. 300 W.; Orem, UT 84057; (801) 225- 1757

The Auxiliary Exchange

From the President

It's me again! I am pleased that so many of my Auxiliary friends have made the decision to attend the National Convention in Las Vegas.

Much emphasis has been placed in our chapters in the recent past on honesty and integrity. These two words have always been important in businesses of all types and in most social circumstances. High school and college training spend much time on these subjects to train young people to be prepared for the "real" world ahead of them. We should be happy that we, too, spend much time in preparation for using these subjects in our work and our lives.

Your convention planning committee, I know, has some training sessions planned for us in Las Vegas. Included in these sessions will be some discussion on these subjects.

Be prepared for discussion on such things as honor and honesty and kindness and understanding. Things which make the piano technician a better person will also make his wife or her husband a better person. If you think that too much is being said about these things, please let your national president know of your opinion.

See you at the convention in Las Vegas!

Louise Strong, President

Xmas in July

"Deck the Halls"—that is about all there is left to do! However, there is still time to find a friend going to Las Vegas to transport your handmade decoration or special gift — that is if you have not already made your reservation to attend. Our train will be running full speed around the tree, waiting for you to take home. I'm certain someone would be happy to purchase tickets for you...So again, if you are not attending, send a check with a friend...$1.00 a ticket or 6 for $5.00. The profits from this effort will put the name of the Piano Technicians Guild Auxiliary before many who did not know we existed...hopefully fullfilling the "Purpose" of our By-Laws..."to promote friendship, education, understanding, and good will in the world of music."

CHRISTMAS IN JULY

LAS VEGAS — 1986

An RTT's Life In the Soviet Union

South Bay Chapter RTT **Isaac Sadigursky** lived most of his life in the Soviet Socialist Republic of Moldavia in the capital city of Krishnev near the Black Sea in the Soviet Union. Twelve years ago he was able to emmigrate to the U.S. because his wife's family lived here. In Russia he was employed as first clarinet in a philharmonic orchestra. Realizing he might not be able to make a living as a musician in this country he undertook to learn everything he could about something that had always held tremendous interest for him — piano technology. There are no schools of piano technology in Russia but he did manage to pick up some of the basics from the two technicians in his city.

Speaking at the Northern California Seminar, Isaac fascinated a mixed group of technicians and auxiliary with two hours of the economics, customs and cultural background of a nation about which we really know very little. It was a most entertaining and informative experience.

We learned that the average Russian piano owner must wait about three years for a visit from the piano tuner unless they resort to some sort of an illegal barter system or have friends in high places. For that matter, they also have to wait for nearly everything else! One of Isaac's many Russian jokes was: "There's a six-month wait at the abortion clinic!"

We know what often happens whenever our government gets too involved in running something. In Russia the government owns and runs everything so it is no wonder their economy is in a shambles. Piano technicians don't have automobiles and get to their tunings via streetcars. A tuning takes five hours. Automobiles are available if one has the rubles to buy them but few do. That is because there are no parking places! One must park their car in an assigned garage that is often as much as five miles from their home!

Piano Technicians have no shops since most live in one room with their entire family, leaving little room to rebuild a piano or even regulate an action.

There are no piano supply companies in Russia and the only way a technician can get parts is to travel to one of the few factories in Russia (a country three times the

size of the U.S.) and try and obtain them in a "one-on-one" situation with whomever might be able to give him some through whatever "arrangements" can be made. A naive member of the audience asked Isaac why Russian tuners didn't buy parts from the United States. His answer: "**Don Morton** won't take rubles!"

As the audience of nearly 70 filled the air with questions and Isaac expanded upon his answers it began to become evident that the Russian people are basically fine people caught up in a hopeless web of bureaucratic inefficiency and economic madness. They help each other and do manage to cope somehow. Isaac may have summed things up with one of his many Russian jokes: "Karl Marx returned to earth and walked the streets of Moscow and finally went up to a group of workers and said, "I am very disappointed. All of these years and you still haven't effected the revolution."

Large Turnout For Sacramento Valley's Northern California Seminar

A total of 69 persons attended the Northern California Seminar in Davis on May 10 and were well-rewarded with an unusual and exceptionally fine program. The morning session was for both technicians and Auxiliary and featured a talk by Isaac Sadigursky on the Soviet Union where he lived until emigrating 12 years ago. (see preceding article) After an excellent catered luncheon, the technicians stayed on for Mr. Sadigursky's class on servicing agraffes while the Auxiliary toured the University of California-Davis Arboretum. It consists of four separate groves, each featuring all of the many varieties of one species of tree — over 50 different types of oak tree, for example. There were both annual and perennials, with a wide variety of species.

Last-Minute Tips For Conventioneers

Many planning to attend the Convention in Las Vegas have been asking who will be appearing in the various showrooms. Unfortunately, most of the casinos don't announce their bookings as far in advance as this is being written. We do know the Pointer Sisters are at Caesars Palace and the Desert Inn has the ever-popular TBA & Rich Little through July 23, with Suzanne Somers and the Smothers Brothers coming in on the 24th. For information on other casinos, call All State Tours toll-free at 1-800-634-6787. You can also book reservations at that number. There is a location for purchasing show tickets across the street from Caesars at the Holiday Inn Center Strip.

It is still not too late to register for this year's convention, get in on all the fun and luxuriate in one of the world's finest hotels. You may never get another opportunity to stay in such sumptuous splendor at the reasonably low rates they have allowed us.

The Auxiliary program will focus on culture in this city usually associated with less cultural pursuits. This was made possible through the efforts of a non-profit group aptly named "Cultural Focus." They are affiliated with the Allied Arts Council of Southern Nevada and arrange special tours, etc. for convention groups as one way of pointing out the many cultural advantages Las Vegas offers. There are three essentials for strong cultural programs at the community level: a large number of dedicated, hard-working volunteers; a pool of talented performers, and a continuous source of money. Las Vegas has an abundant supply of all three.

Dear Readers,

This is my final issue as Editor of the Auxiliary Exchange. next month's issue will be under the most capable hands of **Agnes Huether**. I have enjoyed the past two years, even though at times I felt I would never be able to fill the pages.

I accepted this job believing my principal duty would be to edit. This was not always the case. If we are to continue having these two pages in the *Journal* it is essential that *you*, the readers, do your share to keep them interesting. Submit reports on your meetings, conventions and seminars. Whenever you run across anything you feel might be of interest, send it along to Agnes. The more material she has from which to choose, the more interesting the pages will be. Agnes has far greater writing ability than I. I'm sure she will be able to keep the pages lively in spite of the dearth of material that has been the pattern in recent years. With just a little bit of help from *you*, they could be even better!

I am most grateful to those persons who did submit material and would like to expressly thank **Ruth Pollard, Ginny Russell, Julie Berry, Norma Lamb, Dorothea Odenheimer, Shirlie Felton, Lu Ellen Preuitt, Patti Mannino, Jewell Sprinkle,** all of the **PTGA Board,** and those **PTG Chairpersons** who kept me informed on their programs.

And last, but certainly not least, my thanks to *Journal* Editor **Larry Goldsmith** without whose support, tolerance and wholehearted cooperation I would never have made it through the two years.

Ginger Bryant

Getting the Organizational Spirit

Qualification Loopholes

M.B. Hawkins
Vice President

About 11 1/2 years ago an article called "Piano Technicians Guild" appeared in the *PTM World of Music Magazine*. It gave a quick overview of what the organization is all about. One section of that article was entitled "Qualification Loopholes." It expresses some very concrete views that are as true today as 11 years ago. The next few paragraphs are an extract from that article.

"The combined effort of the lack of understanding of good piano service by the general public, and the absence of governmental regulation or formal training requirements for piano technicians, has made it possible for any person with a few tools and a little knowledge to represent themselves to the public as qualified.

"The results have often been detrimental both to the public and the piano industry including manufacturers, dealers, and music teachers alike. Many pianos, if serviced at all, have been poorly tuned and inadequately regulated to give satisfactory performance.

"Through its program of technical institutes, seminars, workshops, clinics, and local chapter technical programs, the Guild makes available to all members the best obtainable instruction in piano technology.

"For the benefit of the public as well as the piano industry, the Guild identifies those members who are able to prove a satisfactory level of competence, through standardized examinations, as Registered Tuner-Technicians (or Craftsmen). While there well may be non-members in some areas just as competent, they have not chosen to prove their competence to their peers."

Later this month the Guild will hold its 29th Annual Covention and Institute. What a great time to join the team that's making a difference in eliminating the loopholes. Come to Las Vegas and "Realize Your Potential."

New Members

REGION 1

Connecticut — 064
Clark, Bruce E.
10 River Road
Clinton, CT 06413
(Allied Tradesman)

L.I.-Suffolk, NY — 117
Snook, Barbara A.
129 Hickory St.
Port Jefferson Sta., NY 11766
(Registered Technician)

Wills, Godfrey W.
10 Balfour Lane
Stony Brook, NY 11790
(Apprentice)

REGION 2

Central Florida — 327
Julin, Stanley C.
1776 Blackwood Ave.
Winter Garden, FL 32787
(Student)

Memphis, TN — 381
Vanscoy, Vincent F II
3118 Flint
Memphis, TN 38115
(Student)

REGION 3

El Paso, TX — 799
Carrell, Bill
1801 Lamar Circle
Alamogordo, NM 88310
(Student)

REGION 4

Springs Valley, IN — 474
James, Daniel E.
30 W. Iowa St.
Evansville, IN 47710
(Student)

Lansing, MI — 489
Torrella, Ronald K.
704 Sunset Lane
E. Lansing, MI 48823
(Student)

Appleton, WI — 549
Merrell, Kenneth W.
822 1/2 So. Maple Ave.
Green Bay, WI 54304
(Student)

REGION 5

St. Louis, MO — 631
Blumenthal, Fred A.
1804 Hickory St.
St. Louis, MO 63104
(Student)

Kansas City, MO — 641
Glenn, Della J.
1807 Wornall Road
Excelsior Springs, MO 64024
(Student)

Shepherd, Sherry R.
211 Bland Lane
Gower, MO 64454
(Student)

REGION 5

Nebraska — 683
Osterberg, Michael J.
705 West 22nd St.
Kearney, NE 68847
(Student)

Member-at-Large
Pickett, Tom
1205 Green, Apt. 113
Gillette, WY 82716
(Student)

REGION 6

Reno, NV — 895
Kurek, Steve A.
1195 Dedi St., P.O. Box 17584
South Lake Tahoe, CA 95706
(Student)

San Diego, CA — 921
Ormonde, Nevada L.
4647 Adair St.
San Diego, CA 92107
(Student)

Orange County, CA — 926
Babcock, Susan E.
5353 Humboldt Dr.
Buena Park, CA 90621
(Student)

Rule, James C.
20702 El Toro Rd., Apt. 287
El Toro, CA 92630
(Student)

Modesto, CA — 953
Davis, Marcia L.
1639 Barcelona
Stockton, CA 95209
(Registered Technician)

Erwin, Harold L.
1101 Higgins Ct.
Modesto, CA 95351
(Apprentice)

Langlois, Edmond J.
1209 McHenry Ave.
Modesto, CA 95350
(Apprentice)

Langlois, Greg J.
616 Charles Ave.
Modesto, CA 95350
(Student)

Reclassifications

REGION 1

Toronto — 062
O'Brien, Robert J.
92 McMurchy St.
Brampton, Ont., Canada
L6Y 1Y8
(Student to Apprentice)

Pulsifer, Bruce H.
225 Arris Cres., P.O. Box 1204
Mitchell, Ont., Canada
NOK 1HO
(Student to Apprentice)

REGION 3

Heart of Texas — 676
Bray, Wilson
3809 N. 21st St.
Waco, TX 76708
(Student to Apprentice)

REGION 4

Lansing, MI — 489
Bender, Bruce A.
224 Elizabeth
E. Lansing, MI 48823
(Student to RTT)

West Michigan — 625
Cristy, Martha
4070 N. Andrus Rd.
Hastings, MI 49058
(Student to RTT)

Central Illinois — 625
Bennett, Barbara E.
303 Leland
Bloomington, IL 61701
(Student to RTT)

REGION 6

San Diego, CA — 921
Ponche, Kenneth C.
2351½ Boundary St.
San Diego, CA 92104
(Student)

Member Recruitment Points
June 1, 1985 — July 1, 1986

	Pts.	Mbrs.
Agnello, Joseph	4	1
Allen, Owen W.	1	1
Anderson, Mark S.	1	1
Anderson, Richard	6	2
Bailey, Benjamin N.	3	3
Baird, John H.	1	1
Baker, Elizabeth A.	1	1
Baldassin, Rick L.	4	1
Ball, Charles K.	5	1
Barber, Edward D., Sr.	15	3
Barr, David J.	6	2
Beck, Robert W.	1	1
Bessette, Roland	8	3
Betts, David C.	5	1
Blees, Willem	6	2
Bondurant, Gary A.	5	1
Boone, Danny L.	1	1
Brady, Stephen H.	6	2
Bremmer, Ernest B.	5	1
Briggs, Arthur R.	1	1
Brooks, Walter, Jr.	3	1
Brown, Russell	1	1
Carey, Marcel	8	2
Chadwick, James D.	1	1
Charles, Norman M.	1	1
Clayton, Paul E.	1	1
Coberly, R.L.	1	1
Collins, Alastair L.	3	1
Connell, Walter K.	6	2
Conner, J. Stuart	5	1
Conrad, Robert	1	1
Cook, Charles M.	5	1
Crabb, Larry B. Jr.	1	1
Dante, Richard	2	2
Davenport, Richard C.	1	1
Davis, Robert E.	5	1
Delpit, John A.	4	1
Denham, Douglas	1	1
Dowling, Edward D.	5	1
Draine, Patrick	1	1
Drost, Michael A.	2	2
Duncan, David R.	1	1
Ellis, Jim	6	2
Enoch, Norman	1	1
Erwin, Dale S.	18	6
Foli, Donn G.	1	1
Frazer, Lawrence B.	1	1
Gagon, Noel J.	1	1
Garrett, Joseph A.	5	2
Garten, H.D.	1	1
Geiger, James G.	5	5
Ghelardi, Veronica	4	1
Glover, John L.	1	1
Goetsch, Lawrence T.	7	7
Goodrich, Peter B.	1	1
Griffith, M.L.	1	1
Griffiths, Dan	1	1
Grossman, Matthew R.	7	4
Guerra, Edward T.	5	1
Gugala, Gary A.	1	1
Gurlick, Philip J., Jr.	1	1
Gustafson, David E.	9	3
Hanson, Frank C.	4	1
Harding, Claude M.	10	2
Harmon, Clayton C.	8	8
Harris, Harold T.	1	1
Hartley, Sandra M.	4	1
Hebert, Leonard J.	3	3
Hennessy, Frank P.	1	1
Hines, David M.	5	1
Hird, Wesley A.	1	1
Hodgkins, Fred M.	5	1
Hopland, Ray	4	1
Hornbeck, Stephen E.	1	1
Houston, James P., Jr.	1	1
Howell, W. Dean	4	4
Jones, Henry L.	1	1
Jorgensen, Owen	12	4
Keen, Kerry A.	4	1
Kistler, Sharla	1	1
Krebs, Johann B.	5	1
Kurk, Dennis E.	1	1
Laird, Jon M.	1	1
Langlois, Ira T. III	1	1
Leary, Janet	4	1
Lieberman, Carl	5	1
Lovgren, Christine	6	2
Lowell, Tom A.	1	1
Macchia, Allen J.	4	1
Mannino, Donald E.	2	2
Marinelli, Robert A.	3	1
McGuire, Michael R.	5	1
McGuire, James M.	5	1
McMorrow, Edward J.	3	1
McNiel, Thomas	1	1
Mishkin, Robert L.	3	1
Morris, Jere F.	1	1
Morris, Robert E.	3	3
Morton, W. Don	3	3
Musser, Robert E.	1	1
Neal, Douglas	1	1
Neie, Gary A.	14	5
Nelms, Gary A.	2	2
Odenheimer, Fred	1	1
Oliver, Stanley	8	4
Onesti, Ralph	9	5
Overboe, Ellerth	5	1
Palm, Stanley J.	1	1
Pennington, David L.	6	2
Perkins, Robert K.	2	2
Pitts, Floyd D.	5	1
Plumb, Norman W.	1	1
Potter, Randal F.	1	1
Preuitt, Ernest S.	19	5
Probst, Dale E.	1	1
Quint, Richard	1	1
Radd, Dorothy J.	1	1
Raskob, Richard K.	5	1
Reed, G. Timothy	9	5
Reeves, M. Jack	4	1
Reid, Wm. N.	5	1
Reuter, Raymond A.	2	2
Rice, Fred O., Sr.	5	1
Rice, Paul	3	1
Roy, Thomas E., Jr.	5	1
Russell, Robert J.	6	6
Sanders, John B.	4	1
Sanford, Ronald R.	3	1
Scott, H. Dennis	5	1
Shell, Marvin J.	1	1
Shroyer, Alvin M.	5	1
Sierota, Walter	15	5
Sloan, Michael T.	5	1
Smith, Sheldon D.	4	1
Snyder, Stephen H.	2	2
Steege, David J.	1	1
Stone, Sidney O.	1	1
Sutton, Albert H.	1	1
Swafford, Kent E.	4	1
Taylor, David G.	2	2
Teel, Carl W.	2	2
Trautman, Marty	5	1
Travis, John W.	6	3
Tremper, Fred W.	13	4
Trivelas, Chris A.	1	1
Vanderlip, David	1	1
Wagner, Lloyd J.	4	1
Wells, Stephen J.	4	1
Welton, T. Scott	4	1
Wiant, Benjamin F.	5	1
Wigent, Donald E.	5	1
Williams, Robert V.	1	1
Wintsch, Walter F.	5	1
Wolfe, Robert	4	1
Wondra, Lola L.	1	1
Yick, Wm. H.	1	1
Zeringue, Nolan P.	11	3

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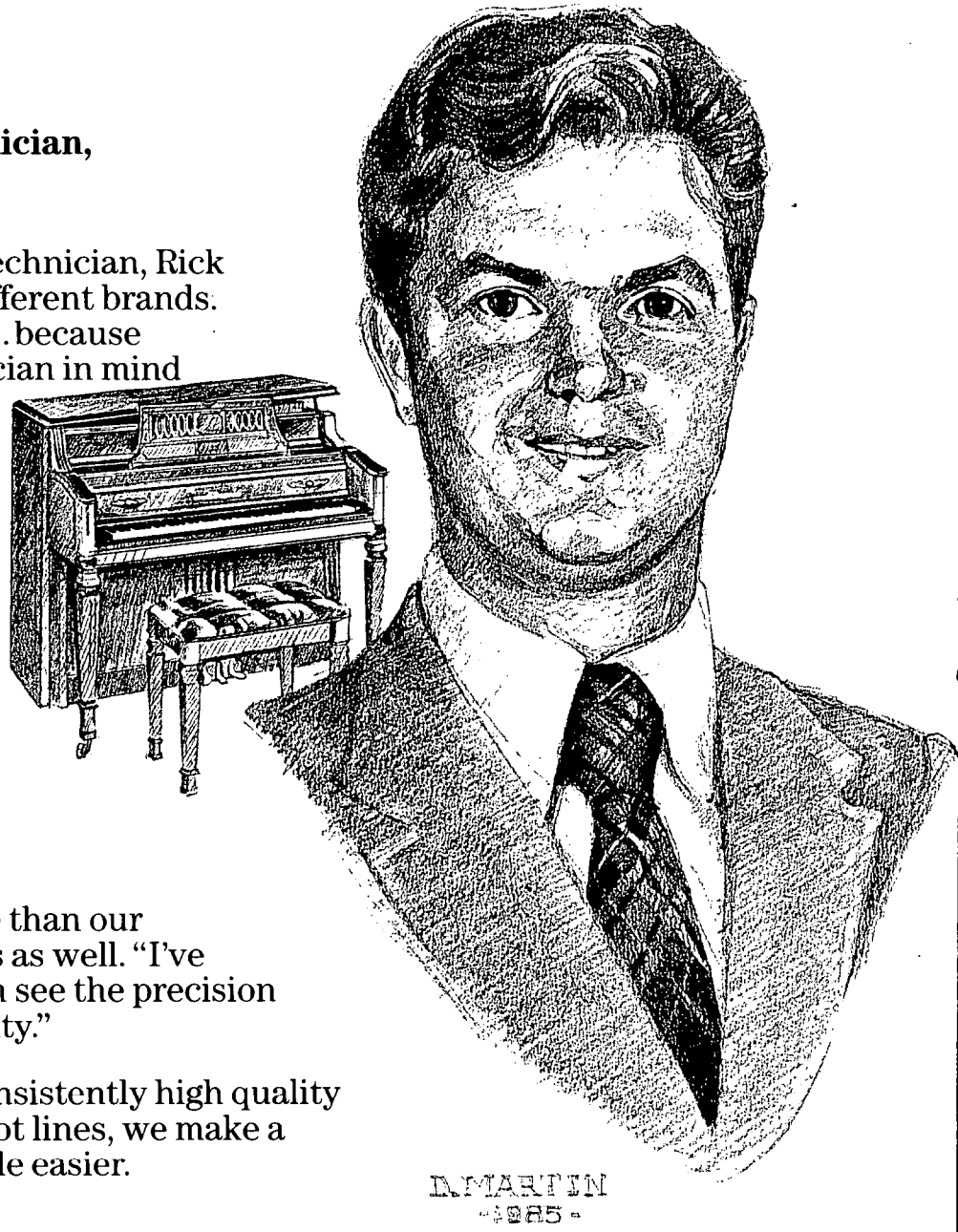

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THE PIANO TECHNICIANS GUILD INC.

Update

July 1986

Balance Sheet

The following statement of the Guild's assets and liabilities reflects our status as of Dec. 31, 1985.

Assets	**1985**	**1984**
Current Assets		
Cash — checking account	$ 39,146.44	$ 15,307.88
Cash — savings/IAPBT	3,120.35	2,563.61
Investments — money market	136,461.84	157,743.28
Investments — certificate of deposit	100,000.00	0.00
Emergency reserve fund	22,346.11	16,134.62
Accounts receivable	275,688.13	276,533.12
Interest receivable	1,828.43	0.00
Inventory — merchandise	15,213,80	11,004.62
Prepaid expenses	5,653.62	4,957.55
Total current assets	$599,458.72	$484,244.68
Other Assets		
Furniture, fixtures, equipment	$ 29,725.25	$ 29,725.25
Depreciation of furniture, fixtures, and equpment	(24,886.00)	(23,286.00)
Organizational costs	1,450.00	1,450.00
Total other assets	$ 6,289.25	$ 7,889.25
Total Assets	**$605,747.97**	**$492,133.93**
Liabilities & Equity		
Current Liabilities		
Accounts payable	$ 13,936.03	$ 15,735.26
Chapter funds payable	32,985.50	35,071.50
Film deposits	300.00	400.00
Unearned income	349,528.50	345,688.00
Deferred compensation — annual	6,000.00	6,000.00
Total current liabilities	$402,750.03	$402,894.76
Deferred compensation — long term	2,500.00	8,500.00
Members' equity	80,739.17	(5,440.44)
Net income/loss	119,758.77	86,179.61
Total Liabilities & Equity	**$605,747.97**	**$492,133.93**

Note: assets and liabilities include membership dues billing for coming year.

New Officers

Cleveland, OH
Kevin Leary, *President*
Ken Sloane, *Vice President*
Al Nemeth, *Secretary*
Janet Leary, *Treasurer*

Puget Sound, WA
John Edward Grace, *President*
Neil Massey, *Secretary*
David Stocker, *Membership Chairman*
James Snyder, *Program Chairman*

Orange County, CA
Robert G. Jackman, *President*
Peg Browne, *Vice President*
Austin Mason, *Treasurer*
Susan Babcock, *Secretary*

Phoenix, AZ
Gary Miles, *President*
Jeff Turner, *Vice President*
Fred Smith, *Secretary*
Gary Gracey, *Treasurer*

Buffalo, NY
Jerald Hatch, *President*
LaVerne Griffith, *Vice President*
Andy Travis, *Recording Secretary*
Betty Griffith, *Corresponding Secretary*
Carl Guhlow, *Treasurer*

Roanoke, VA
Ernest B. Bremner, *President*
Nathan C. Napier, *Vice President*
Clarence W. Farmer, *Secretary*
Harry Doss, *Treasurer*

Chicago, IL
Brian Mott, *President*
Otto Keyes, *Vice President*
Michael MacKinney, *Secretary*
Robert Rothwell, *Treasurer*

Knoxville, TN
Oscar Kirkland, *President*
Tom Graves, *Vice President*
Barry Robertson, *Secretary*
Dennis Mayhew, *Treasurer*

Appleton, WI
Lila M. Zastrow, *President*

Kansas City, MO
Ken Snow, *Vice President*

Continued on next page

Chapter News And Notes

Dale Heikkinen
Chairman, Chapter Management And Achievement Committee

Elections dominate the news for the month of May and June. Nominating committees, to a surprising extent, have frequently submitted only one slate of officers, but still made allowance for write-in candidates on the ballots. Depending on the individual situations, many changes are made with only one or two officers, providing for a certain continuity. As the results are made known, the changes are kept up to date in the *Journal* as well as the National Officer Directory. Council delegates will have a chance to review the results and to make changes at the Council session.

Technicians may want to pay more attention to insurance needs at this year's convention. As reported in newsletters over the past year or so, tools and cases have been reported lost or stolen in Detroit, Seattle and Kansas City. John Vance, member of the Southwest Florida Chapter, lost his home to fire last month. By the time Joseph Buscio of Fort Meyers, FL, arrived, there were fire trucks in front of John's burned-out house. The house was destroyed. His tools were in his truck at the time of the fire, but the truck was not hurt. He located some of his records, but most of them were badly charred. So, in addition to looking for tools and supplies at the convention, one would be well-advised to consider your insurance needs as well at the PTG booth.

Lehigh Valley, PA

In addition to the activities involving chapter programming and the Pennsylvania Teacher Relations Committee, Pauline Fox gave a faculty piano recital at Pinebrook Junior College on April 18. The program included compositions by Bach, Mozart, Grieg and Joplin. She also accompanied some solos given by voice teachers. In addition to teaching piano lessons and music classes part time, Pauline also follows her technical pursuits as well. She is also vice president of her chapter.

Washington, D.C.

Wendell Eaton was in Korea and Japan from April 18 through May 9 helping out in their piano factories.

In something of an annual event, Jordan Kitt's again presented its "Steinway Day" on May 20. This year's presentation, a "Master Class in Tuning," was given by Bill Garlick.

Southwest Florida

Some thoughts from Duncan Richie on customers versus the vibrations and noises that technicians deal with in their daily work: do tuners automatically learn to ignore some of these noises? Do customers ignore some and not others? When a technician inquires about a noise from a complaining customer, more often than not the reply will be "you can't hear *that?*" And *that* may be difficult to hear. *That* is often some slight ping that a technician must really concentrate on to hear. Sometimes *that* is found right away, whereas someone previous could not find it. And "at other times after frustrated attempts, I have suggested calling another tuner," he says, "or maybe I've just learned to tune *that* out."

Heart of Texas

A new opportunity to expand their skills? The chapter has just undertaken to "rebuild" a Chickering grand piano. The project will include refinishing (with a new decal), a new pinblock, repairing soundboard cracks, refinishing the plate, new agraffes, restringing, action repairs, plus regulation. Most of the work will be done at Danny Boone's workshop on the campus of Baylor University.

Continued on page 4

Between You And Me

M.B. Hawkins
Vice President

Do we as members need to review our commitment to our professional association?

I'm sure this question will be answered in a variety of ways, and I'll not attempt to suggest any that may be forthcoming. I would just hope most of us would say, "Why not? What is there to lose?" I say there is nothing to lose but much to be gained. If we are honest with ourselves we will examine and re-examine all ways in which we are connected with the Guild.

For example, do we really stretch to improve ourselves technically? By this, I mean do we move ourselves from our comfort zone purposely to become more sensitive to our technical deficiencies? Put another way, how much are we willing to sacrifice to see if we can improve? As I visit seminars and conferences, I seem to see the same faces. That is great, but the same faces are absent over and over. It has been said many times, "Don't become ripe because that next stage is becoming rotten." Continuing to be green and in the stage of becoming ripe is where we want to be.

While we are being honest with ourselves, how about this: when is the last time I really reached out to help someone? Now this one can make your hair stand on end. There are so many of our members who give and give and give. I hope they never stop because they have tapped the source of real growth. But you have got to know there are many who take and take and take *ad infinitum*. And of course the answer to that question is "lots." A good strong member realizes that membership is so much more than paying dues, carrying a membership card and receiving the *Journal*.

Supporting our chapter shows up in many ways. One is attending meetings regularly. For some this means traveling long distances. Many do, while others make excuses. Sometimes being there when a person who has never given a technical is giving the technical lends tremendous support. You, too, did it that first time...remember? There are chapter committees that require a little time. There is the phone call to the person who is ill or that you've not seen for some time at a meeting. There are those ideas that you have but rationalize that "someone else will think of it" so you don't bother to speak up. How about policing ourselves — how well are we doing that? How much are we turning our heads from things we know deep down inside we should be giving energy to? I've even heard some say, "I don't make reference to getting a PTG-Registered Tuner-Technician anymore, I use specific names in a referral." There is certainly no problem with using specific names in a referral, but if we can't say or do not feel comfortable making reference to the Piano Technicians Guild with pride, we do have a problem. Maybe we are a part of the problem rather than a part of the solution. Only you can answer that.

Proudly displaying the membership pin, helping with the newsletter, volunteering for the chapter scrapbook upkeep by taking pictures, helping to set up for or clean up after meetings are all things that need to be done. You know what? If each of us during the next year really set our mind to it, we would scare ourselves with what we could accomplish. If I received a call from a number of my fellow members asking me where I was at the last meeting or would I be willing to help with this or with that, I believe I would think a bit longer before I simply said no. Would you agree with that? When we joined PTG we did accept certain principles, but as time goes on, we sometimes let things slip and the picture of what we once saw ceases to be as vivid as it once was. What we need to do is renew the vividness and begin again refreshed.

Since this is the end of our association year, let us start anew and go for it! We will all be the beneficiaries.

1986 Symposium Of Chapter Presidents

While generalizations about small face-to-face groups need qualification and/or elaboration before they can adequately account for the behavior of a larger organization, theory attempts to show the orderliness in the changes and necessary qualifications. It is my belief that little of this type of mental preparation was attended to almost 30 years ago when we became the Piano Technicians Guild with chapters as subordinate bodies. Even so, a lot of progress has been made over the years.

Although we are aware of these advances, as an organization it is necessary to constantly look ahead in order not to stagnate. The Symposium of Chapter Presidents is designed with that idea in mind. All chapter presidents will come away armed for the coming year in a way never seen before. Be sure your chapter president is there.

New Officers . . .

Western Michigan
David Postma, *President*
Lyle V. Wood, *Vice President*
Charles Gibson, *Secretary*
Dale T. Welch, *Treasurer*

Heart of Texas
Charlie Fry, *President*

News and Notes...

Cleveland

Could it be true that one could possibly see a multi-million dollar collection of musical instruments? The chapter was fortunate to see one such private collection housed in the home of Vince Aveni. It included reproducing grand pianos, player pianos, player violins, player accordians, player carousel organs, a theater organ and some other musical and mechanical oddities. Brian Wilson demonstrated his prodigious keyboard skills on the mighty theater organ. It was an enlightening evening for the chapter, complete with a gourmet party tray.

Madison

What new tool could earn a place in your present tool kit? Let's describe this as a screwdriver the size of a tuning hammer. It is powered by a rechargeable battery pack that slips into the handle. It has a quarter-inch hex drive that will handle quarter-inch nuts and a variety of tips, including phillips, torx, slotted, hex and drill bits. It also has a stiff price. Before you give up, however, one great feature of the tool is a clutch dial that allows you to adjust the amount of torque used to drive the bits. This tools is the Milwaukee cordless electric screwdriver. According to Tim Farley, who has used it, the tool is a great time-saver when working on piano hinges, key slip screws, trap work, Dampp-Chasers and action flange screws.

Chicago

Program planners: do you always need a formal setting? Do you always have to have one class period in the evening? Do you always plan your programs around one speaker? Then take note! The Chicago Chapter planned a potpourri of six small group sessions on regulation and related topics for May. Most classes were repeated. The evening had two separate periods. The setting was informal.

Using a three-note action model with pedals, Mike MacKinney led a group on regulation. Keyong Hee Lee led a group through a consensus regulation of a grand action model.

David Hines demonstrated action centers and the proper techniques for working with Steinway Permafree I and II centers. Key preparation for regulation was conducted by Jim Houston.

With emphasis on the new standardized technical test, Jim Hudson demonstrated grand action assembly and regulation while Richard Anderson led a hands-on class on string-splicing.

In Respectful Memory...

George Reynolds

Professor George F. Reynolds, 58, of Saranac Lake, NY, died Feb. 28.

Reynolds, who had taught at North Country Community College since it opened in 1968, was head of the school's music department. He was a 10-year member-at-large of the Piano Technicians Guild, and taught a course in piano technology at the college.

A recipient of the "Outstanding Educator in America" award, he was adjudicator of the New York State School of Music Association; president of the Essex-Franklin Lyceum, Inc.; and coordinator of the Adirondack Choral Vocal Workshop, which he also served as composer, educator and sponsor.

Reynolds was listed in "Who's Who in Music in America," and was a member of the American Society of Composers, Authors and Publishers, a life member of the New York School of Music Association, the American Chorale Directors Association, the Music Educators National Conference, the National Educators Association, and the American Guild of Organists.

A U.S. Marine Corps veteran of WWII and the Korean Conflict, Reynolds is survived by his wife, Lenore; two daughters, Mrs. Lynne Gollands of Tyngboro, MA, and Kim Reynolds of Saranac Lake; a brother, Ralph, of Rochester, NY; three nieces; a nephew; and many cousins.

Elwyn E. Lacey

Elwyn E. Lacey, 78, died recently at his home in Florence, MA. Lacey, a craftsman member of the Western Massachusetts Chapter, had been involved in piano technology for the past 12 years.

He had been an active member and officer of the Bricklayers Union for more than 60 years, and was a former officer of the Northampton, MA, Building Trades Council.

He is survived by his wife of 56 years, Doris; four sons, Eugene, of Springfield, VT, Robert, of Westhampton, MA, Edward of Southampton, MA, and the Rev. John Lacey, of Vernon, CT; a sister, Audrey Roy of Greenfield; 13 grandchildren and seven great-grandchildren.

Attend
the 1986 Chapter President's Symposium in Las Vegas.

Learn
more effective techniques for keeping your chapter moving forward.

Share
your own successes with other chapter presidents.

Carry
This invaluable information back to your own chapter.

Remember
to be in the Bacchanal Room of Caesars Palace at 8 a.m. Wednesday, July 23

'...And Our Tuning Forks Are Raised In Song?...'

Barbershop singing at the national Piano Technicians Guild Convention? You bet! It's been that way for the past six years under the organization and direction of Larry Crabb, a 15-year member of the Society for the Preservation and Encouragement of BarberShop Quartet Singing in America, and a member of the Stone Mountain, Georgia, chapter. He was a 10-year member and two-year president of the Atlanta chapter before helping to organize the Stone Mountain barbershoppers.

Larry Crabb is a registered craftsman piano tuner/technician and a long-time active member of the Piano Technicians Guild. For the closing luncheon at the Guild's 1980 convention, he was asked to get a group of piano technicians together to sing a well-known song, but with special words to promote the next year's convention in San Francisco. Larry managed to put "I Left My Heart in San Francisco" into a barbershop-style arrangement, recruited men and women singers (the women sing the tenor line an octave lower than their normal range) and went to work. This newly formed chorus of piano technicians outdid themselves and brought the audience to its feet. Even the chorus members who knew nothing about barbershop-style singing couldn't believe the sounds they had produced. Just as in "barbershopping," piano tuning is based on using the overtones (harmonics) of pitches, so these new singers to barbershop were hearing expanded sounds all around them, and — believe it or not — were singing without losing pitch! (What else do you expect from piano tuners?)

The next year in San Francisco, Larry was literally bombarded with requests to have a chorus again. So, for one hour each day after the technical sessions were over, the recruited singers were taught by rote some very simple barbershop-style arrangements. Again, most of them were not familiar with this type of singing. The resulting show for the closing luncheon was another big success.

The PTG Barbershop Chorus performed during last year's convention. A similar program is planned for this year's gathering.

Since then Larry has enlarged his chorus to 40 voices, added some newly organized quartets, and has performed all over the country in cities such as Washington, D.C., New Orleans and most recently in Kansas City. This last performance included a concert on the stairs in the beautiful open lobby at the PTG's convention hotel in Kansas City, with a "packed house" of conventioneers filling the lobby and the sound carrying to every floor where people were listening and applauding. In July of this year, his chorus will be presenting a special "theme" show during the Guild's convention at Caesars Palace in Las Vegas.

Larry manages to plan his performances to include audience participation activities and songs well known to people everywhere. He runs through his audiences keeping people jumping up and down to "Little Tommy Tinker...," "My Bonnie Lies Over the Ocean," etc., and loves doing it as much as his audience loves participating.

Since 1980 there have been no less than six piano technicians who have told Larry that they have now joined the Barbershop Society (and the Sweet Adelines — the women's society) because of the joy they have experienced singing with the PTG chorus. Larry enjoys the nice feelings he gets when new members discover the "barbershop sound" and the fellowship it brings.

Crabb has now sponsored close to 46 members in the Society. He was the chapter president of the Stone Mountain, GA, chapter, where he spearheaded the formation of this second chapter in Metro Atlanta. This new chapter immediately performed in the Dixie District convention and later won the Georgia Divisional championship two years in a row. They will be one of the largest chapters competing this fall at the Dixie contest in Winston- Salem, NC.

Larry does the chapter's "sing-a-long" and door prizes each year at its annual show. He is a devoted barbershopper, loves his piano tuning and rebuilding work, and, in his own unique way, loves his role in promoting barbership singing throughout the land.

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Chapter Programs

Western Massachusetts — "The effect of hammer weight on action regulation;" Bill Ballard.
L.I. Cristofori — "Repairs of troublesome actions (bird cage epecially);" James Drago.
Syracuse — "Una corda regulation;" Joe Karwacki.
Pittsburgh — "It's the little things that count;" Rolland Stiefel.
Reading-Lancaster — "Psychological approach to piano troubleshooting;" Ernie Juhn.

Recent Film And Tape Usage

East Texas Chapter (Patrick Griffin) — "Action Centers."
Houston, TX, Chapter (Keith Matis) — "Action Centers."
Erie, PA, Chapter (Gary Nelms) — "Bridge Repair."
Little Egypt, IL, Chapter (James Byassee) — "Bridge Repair," "Upright Action Restoration."
Southeast Massachusetts Chapter (Chip Downing) — "The Miracle of Felt."
Eastern Washinton, Chapter (Tom Kuntz) — "Piano Teacher — Piano Technician Forum."

Selling Yourself And The Piano Technicians Guild

Dick Bittinger
Reading-Lancaster Chapter

Summertime is a great time of year. However, many piano technicians say business is slow then. People are on vacations, some piano teachers take off over the summer, kids go away to camp, etc. All this can make it rough to get your tuning schedule lined up for the summer.

Then you hear that ever-popular phrase, "I understand a piano shouldn't be tuned in the summer." Now, who would tell a person such a thing? Well, in my travels when I was an RVP and visiting chapters throughout the Northeast Region, I was told this phrase was heard from piano teachers, piano salesmen, that ghost tooner and good, helpful neighbors.

Yes, we really need to do some educational work on the piano-involved public. As a professional tuner-technician, you should have a good response to such statements. Right here it is, in a Piano Technicians Guild brochure called "Should I...?"

Don't forget to put your name, address and phone number on the back of the brochure where it says, "Compliments of..." Another question answered is, "What is the Piano Technicians Guild?" See how it all fits together? Now that you have the answer to summertime tunings and use this business aid, your income will increase. That means you will be able to take a week off and attend the annual Piano Technicians Guild Convention in Las Vegas July 21-25. What you learn at the convention will allow you to give better service to your customers and increase your income. There is nothing to lose and much to gain. "Realize Your Potential" The light is green, so go for it! Don't forget to have your chapter order the slide show of business aids for a chapter technical.

What is the Piano Technicians Guild?

The Piano Technicians Guild is an international nonprofit organization for skilled professional piano technicians who are the foremost piano craftsmen. Membership as a Registered Technician is only acquired by passing rigid examination. It is the aim of the Guild to maintain the highest level of professional skill, and its purpose is to provide piano owners with an accredited service, readily available, and thoroughly dependable.

Protect yourself and your piano by always engaging the services of a piano technician who carries a current Guild membership card for identification as a Registered Technician. You can trust the Piano Technicians Guild for quality piano maintenance, repair, rebuilding and tuning.

Published in the interest of better music through better serviced pianos by

PIANO TECHNICIANS GUILD,
9140 Ward Parkway, Kansas City, MO 64114.

COMPLIMENTS OF

should I . . .?

Should I have my piano tuned during the spring and summer even if I will not be at home?

SPRING . . . SUMMER AND YOUR PIANO

Should a piano be kept in tune during the hot months? Definitely, yes!

Even if you will not be at home during the summer, your piano should be left in tune because the warm months are a very important time in a piano's life.

Here's why:

The soundboard of a piano is crowned, or bowed, slightly upward against its strings as is the top of a violin. The steel strings which sing so sweetly, about 230 in number, vary in thickness and length and are stretched to approximately 20 tons tension when the piano is tuned to proper pitch. (*Ask a member of the Piano Technicians Guild to explain "A-440" to you.*) Each string also bears down on this soundboard crown with about seven pounds pressure, which makes a total down bearing against the sensitive soundboard of nearly three-quarters of a ton.

The piano is so well designed that when it is in proper tune, regardless of the thickness or length of its strings, that the great down pressure and tension are properly and harmlessly distributed.

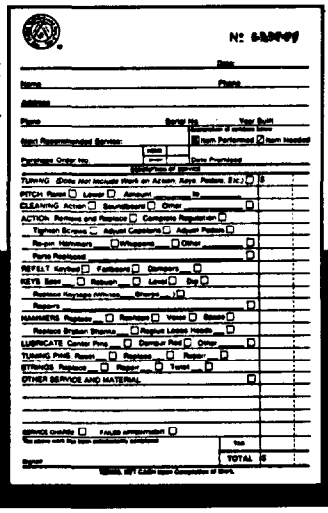
During the spring and summer months, however, the soundboard usually absorbs additional moisture, causing its crown to rise and press harder against the strings. If the piano is out of tune at this time, the tension and down bearing then will be unequally distributed and may warp or split the board. But if the piano is up to pitch and in good tune, there is little danger of this happening.

So protect your investment in music. Keep your piano in tune and ready to play all the year, especially in the summer. This is worthwhile because it is fun to express yourself with music. That is what the piano is for!

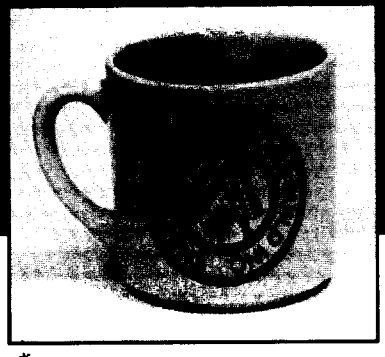
Business Aids*

	Quantity	Total
*Billing Pads — 2-part with logo, 50 per pad; 1/$3.00, 3/$8.00	_____	$_____.__
*Piano Service Appointment Forms — green, 6-part; 100/$14.50	_____	_____.__
*Service Stickers — red and blue with logo 100/$4.00; 200/$6.00; 500/$12.00	_____	_____.__
*Teacher Recital Program covers — 100/$8.00	_____	_____.__
*Pamphlets — 100/$11.00, 500/$50; must be ordered in lots of 100 each.		
"A-440 And Your Piano"	_____	_____.__
"Care Of Your Piano"	_____	_____.__
"Piano Pointers"	_____	_____.__
"How Often Should My Piano Be Tuned?"	_____	_____.__
"The Tuner To Turn To"	_____	_____.__
"The Unseen Artist"	_____	_____.__
"Should I Have My Piano Tuned In Summer?"	_____	_____.__
Reminder Cards	_____	_____.__

Business Aids Total ... $_____.__



Billing Pads



Coffee Mug

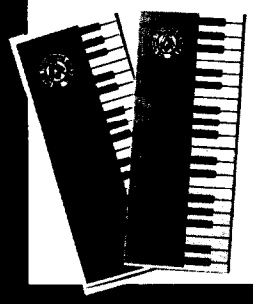
Display The Guild Logo Proudly*

	Quantity	Total
*Coffee Mug — White/blue logo; 1/$4.00, 4/$12.00, 6/$16.50	_____	$_____.__
*Deluxe Briefcase, Portfolio/Clipboard — brown, gold logo, 11" x 14"; 1/$12.50	_____	_____.__
*Meeting/sales Portfolio — navy blue, 12" x 16"; $1.75 each	_____	_____.__
*PTG Notepad — 5-1/2" x 9"; $1.00 each	_____	_____.__
*Pocket Protector — white vinyl, blue logo; 1/$1.25, 3/$2.50	_____	_____.__
*Sew-on Logo Patches — 3" diameter; 1/$1.25, 4/$3.00; Indicate colors: blue/white, blue/gold, black/gold	_____	_____.__
*Logo Stickers — blue/gold/white, peel-off back: 8" diameter logo: 1/$3.00, 2/$5.00, 6/$10.00	_____	_____.__
3-1/2" logo: 1/$1.50, 2/$2/50, 6/$5.50 (3-1/2" logo also available for inside glass — please specify)	_____	_____.__
1-1/2" logo — 1/$.10 (minimum 10)	_____	_____.__
*Metal Cut — 1-1/4" piano and logo, on wooden block; 1/$15.00	_____	_____.__
*Logo Rubber Stamp — wooden handle; 1/$5.00, 2/$8.00. Indicate style: 1-1/4" round, 5/8" round, 1/2" round, 1-1/4" with piano or 7/8" with piano	_____	_____.__
Logo Total		$_____.__

Free Items

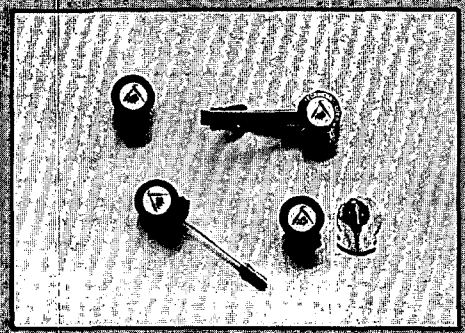
Indicate quantity needed by each item.

- Lending Library List _____
- List Of Manufacturers And Suppliers _____
- List Of Piano Technology Schools _____
- Magic Kingdom Club Application _____
- Member Benefit List _____
- Readers Digest Reprint — "The Other Masters Of The Keyboard" (limit 10 per order) _____
- "The Piano Tuner — Technician" brochure _____
- "What Is The Piano Technicians Guild?" brochure _____
- Guide To Application *Procedures And* Member Classification _____



Publications

	Quantity	Total
"Piano Parts And Their Functions" By Merle Mason (Revised edition) Member: $10.50 (hard), $8.00 (soft)	_____	$_____.__
Non-member: $15.50 (hard), $13.00 (soft)	_____	_____.__
"5-Year Supplement to Classified Index" compiled by Merle Mason; Member: $12.50, Non-member: $15.00	_____	_____.__
"Piano Action Handbook" 1971 Edition; Member: $3.20; Non-member: $4.00	_____	_____.__
Journal Binders — brown, fits 9" x 12" 1/$6.50, 2/$12.00	_____	_____.__
Publications Total		$_____.__



Jewelry, Etc.*

	Quantity	Total
*Membership Pin — lapel-type, gold with blue and white logo: 1/$5.00	_____	$_____.__
*Logo Stickpin — 1/$5.50	_____	_____.__
*Logo Tie Tack — with chain back: 1/$5.00	_____	_____.__
*Logo Earrings Clip: $7.50/pair	_____	_____.__
Pierced: $7.50/pair	_____	_____.__
*Logo Tie Bar — 1/$5.50	_____	_____.__
*Logo Keyring — 1/$2.00	_____	_____.__
*Ballpoint pens — blue/silver; 1/$2.00, 4/$5.00	_____	_____.__
*6' Metal Tape Measure — white with blue logo 1/$3.00	_____	_____.__
*Dash Cash — emergency coin dispenser, white plastic/blue logo, with adhesive to mount on dashboard 1/$.50	_____	_____.__
*Bumper Stickers — "Love Thy Neighbor, Tune Thy Piano"; yellow, white on blue; 1/$.50	_____	_____.__
Jewelry Total		$_____.__

Here's How To Order . . .

Mark quantities and totals in appropriate spaces and total at right. Enclose payment and mail to address below. This form may be photocopied as necessary. Please note that logo items are sold only to Registered Technician Members of the Piano Technicians Guild.

Piano Technicians Guild, Inc.
9140 Ward Parkway
Kansas City, MO 64114

Registered Technician YES ☐ NO ☐

Name_____
Address_____
City/State or Province_____
Zip/Postal Code_____ Phone_____
Chapter_____ Non-member_____
Member's Number_____

Business Aids Total	$_____.__
Logo Total	_____.__
Publications Total	_____.__
Jewelery Total	_____.__
Subtotal	_____.__
Shipping & handling (see table at left)	_____.__
Missouri residents only add 6.125% state sales tax	_____.__
Total enclosed	$_____.__

Shipping And Handling Charges If

Order Totals:	Below $5.00	$5 to $9.99	$10 to $14.99	$15 to $24.99	$25 or more
Add:	$2.00	$2.50	$3.00	$3.50	$4.00

***Sold only to Registered Technicians**