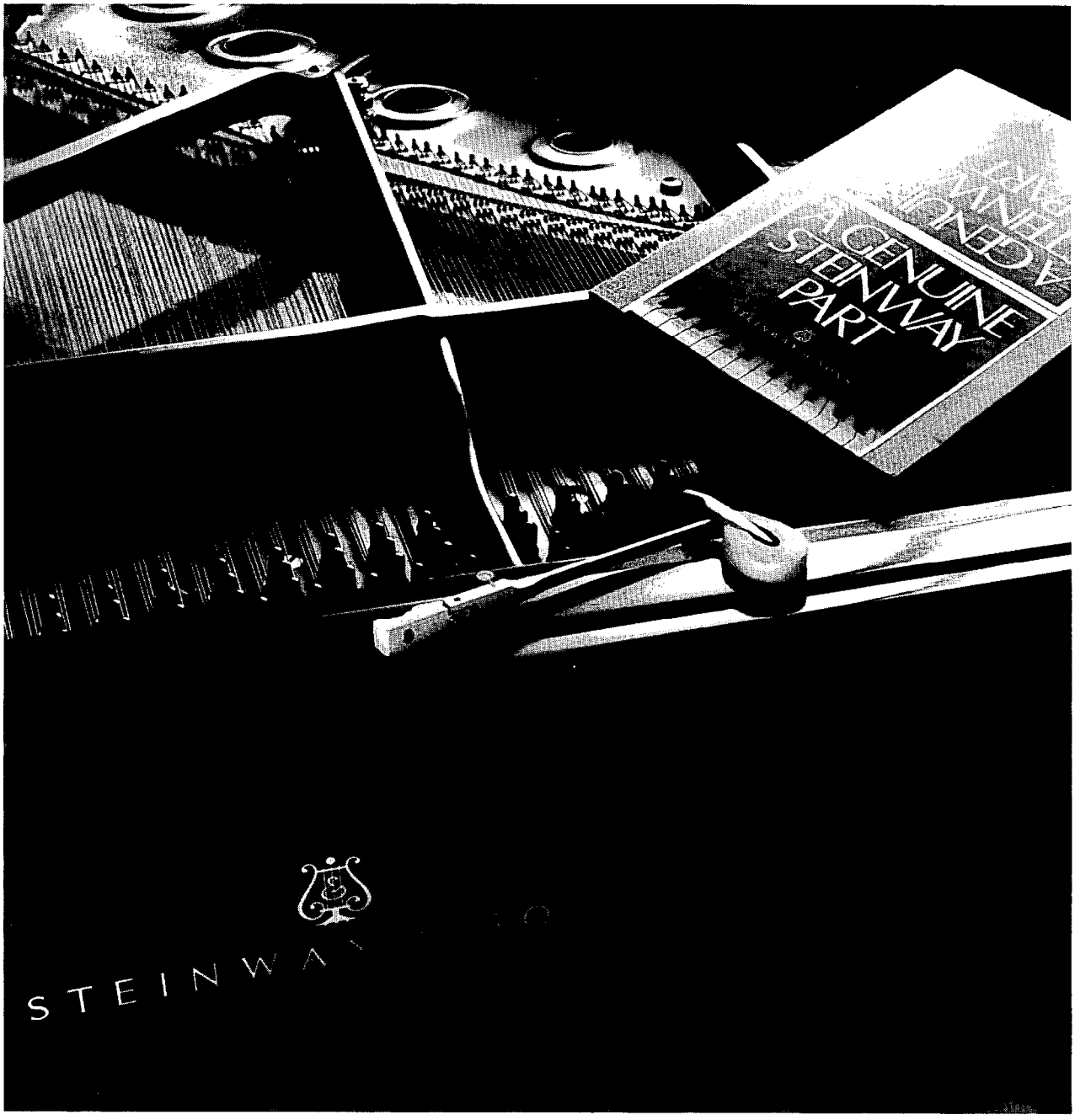
PIANO TECHNICIANS

Journal

March 1993

STEINWAY



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WITHOUT FREQUENT TUNINGS

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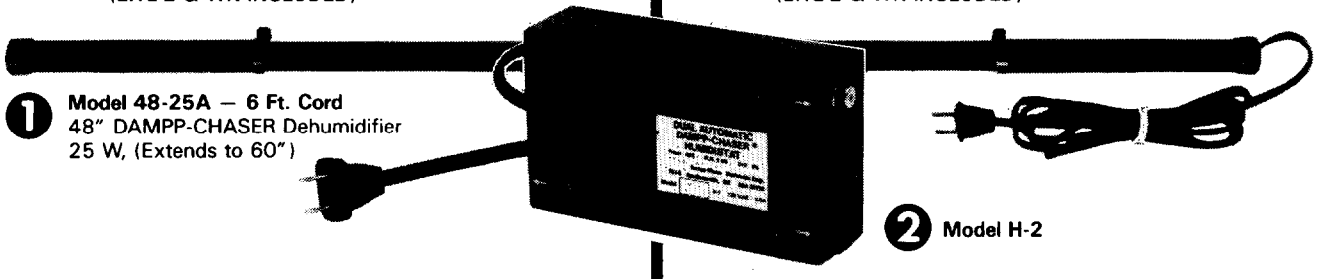
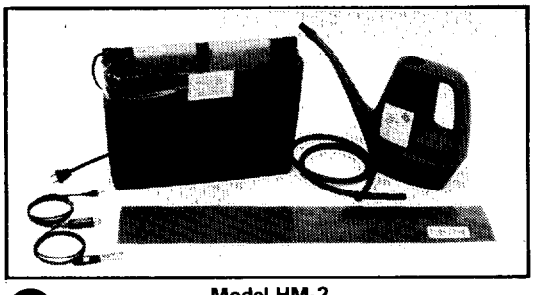
2. H-2 DUAL AUTOMATIC HUMIDISTAT
3. GHM-1 3-PART HUMIDIFIER KIT (LWL-2 & WK INCLUDED)

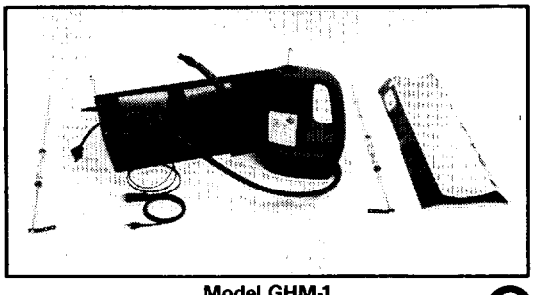


1 **Model 48-25A — 6 Ft. Cord**
48" DAMPP-CHASER Dehumidifier
25 W, (Extends to 60")

2 **Model H-2**



3 **Model HM-2**



Model GHM-1 3

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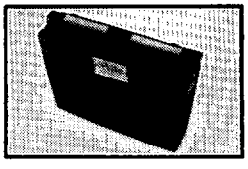
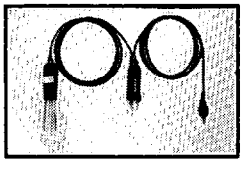
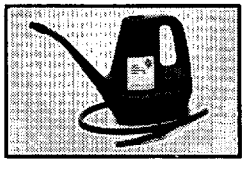


Model HM-1ST
Vertical Humidifier Bucket



Model LWL-2
Vertical & Grand Low Warning Light



Model WK
Vertical & Grand Watering Kit

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PIANO TECHNICIANS JOURNAL

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MARCH 1993 • VOLUME 36 • NUMBER 3

ON THE COVER

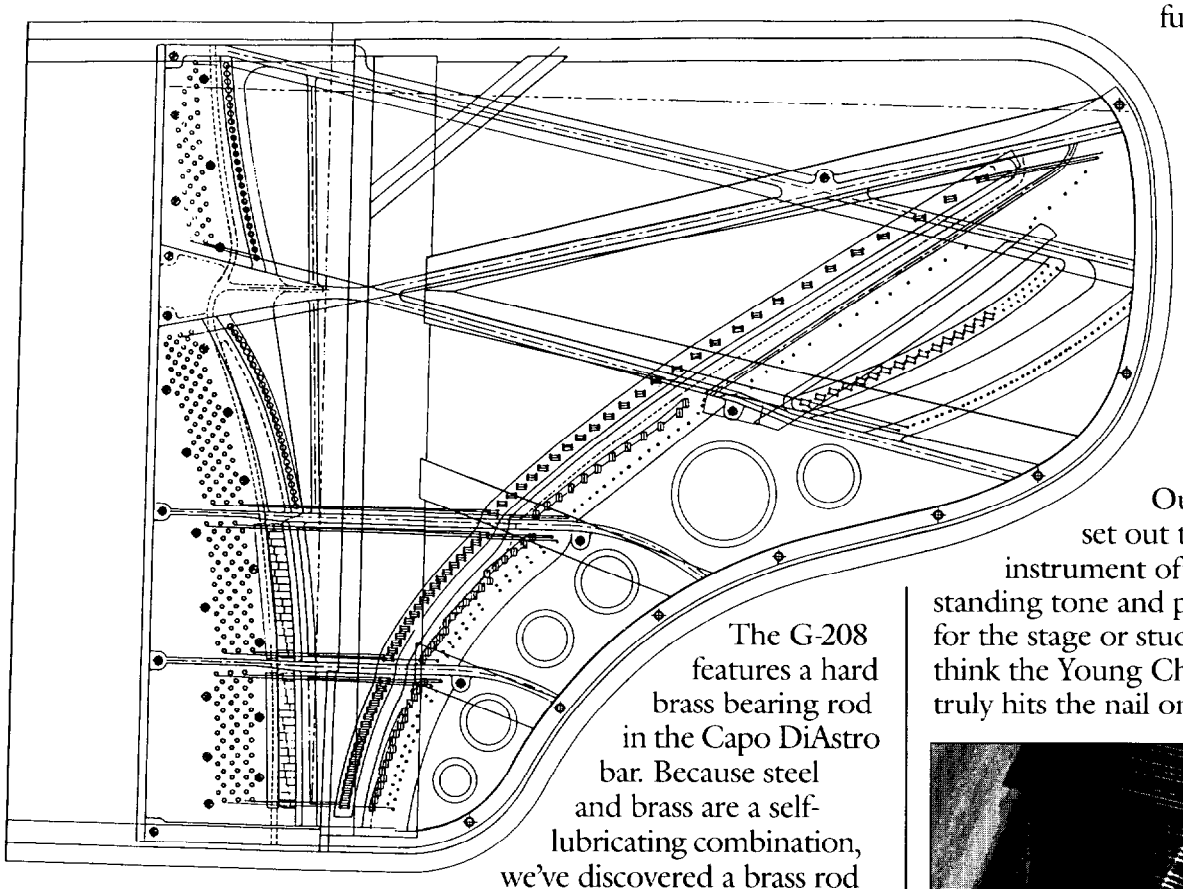
...An artistic interpretation of the real thing.

Inside...*Nick Gravagne offers advice on stringing and tips on how every piano should be built. See Good Vibrations for details.*

A nuts and bolts guide to the new Young Chang G-208.

Our engineers are obsessed with the little things because they recognize the importance of attention to detail. But lately, they've become equally obsessed with big things, and the result is 6'10" long. Our new G-208 grand is a departure for us and represents the smallest and largest of our latest innovations.

The G-208 is a 6'10" grand piano of an entirely new scale design. It features our new "Asymmetrically Crowned" soundboard which places the highest part of the crown in each rib directly under the bridge providing maximum support under the downbearing pressure of the strings. This new soundboard design exhibits improved power, projection and tuning stability, and offers a longer soundboard lifetime. We're so pleased with this new design, we're now incorporating it into all our grand pianos.



The G-208 features a hard brass bearing rod in the Capo DiAstro bar. Because steel and brass are a self-lubricating combination, we've discovered a brass rod offers better control of strings during tuning. In addition, the brass rod is easily replaced later in the life of the instrument eliminating the need for reshaping of the capo bar.

We also took a close look at our action and developed an all-new action design which improves response without loss of projection or clarity.

Our new double duplex system terminates the strings at the rear of the bridge and near the tuning pins with duplex bars. Both duplex lengths of the strings for each note are then terminated in equal length offering improved sustain, projection and clarity.

Together these innovations create an instrument with a rich, full sound, greatly improved response and a remarkable evenness of tone throughout the entire range of the keyboard. Our engineers set out to design an instrument offering outstanding tone and performance for the stage or studio. And we think the Young Chang G-208 truly hits the nail on the head.

Because strings bear against a replaceable brass rod, tuning control is improved.

For technical information on our new G-208 grand piano, write to us at Young Chang America, Inc., 13336 Alondra Blvd, Cerritos, CA 90701. Or call 310/926-3200, ext. 237.

YOUNG CHANG

The best the world has to offer.

KAWAI
NEWS

Plastics Proven To Be Superior To Wood In A Quality Piano Action...

Obviously, there is resistance to change. However, innovative scientific plastics are available and readily replace less effective conventional materials in the piano action...

..."Scientific tests, i.e., high and low temperature cycle tests, low and high humidity tests, bending strength tests, specific gravity tests, performance comparison tests and over two decades of use in Kawai's Ultra-Responsive™ Action (without a single failure) have proven ABS* materials to be superior to wood in touch, durability and accuracy."

..."Plastic parts have a number of advantages over wooden ones. They can be made more uniform in shape and weight, are indifferent to temperature and humidity changes, and have no glue joints to come apart"

Larry Fine
The Piano Book © 1987
Boston, Massachusetts

Symphony, Concert, University And Other Certified Technicians Praise Superiority Of Plastic Piano Action Parts:

..."I have never seen a Kawai synthetic action part fail...or be affected by temperature change or use."

Steve Smith
Dallas, Texas

..."There is no contest between Kawai's synthetic jack and a wooden jack. The Kawai jack wins hands down."

Edward R. Erwin
Boca Raton, Florida

..."The Carbon Jack is a good idea whose time has come... Makes accurate regulating easy..."

Sean Kelly
Denver, Colorado

..."ABS advantages over wood are numerous. The reliability and consistency in manufacturing is unbelievably good... Kawai is a bold innovator... Precise action performance is a function of Kawai's advanced mechanical engineering and highly developed production methods."

James Alexander
Detroit, Michigan

..."The incorporation of ABS plastic action parts in Kawai pianos make them the instrument of logical choice for universities. I have never had to replace a Kawai jack or flange."

Matthew Dickerson
Indianapolis, Indiana

..."Kawai's use of plastic in the action is a good idea. I never had a problem with the plastic components in a Kawai Action. Slowness and swelling found in wood action components are not evident where Kawai uses plastic."

Paul Monroe
Irvine, California

..."The Kawai Black Jack and plastic flanges are phenomenal, I never had a single problem with them."

Roberi McMorrow
Baldwin, New York

..."In the 10 years I have serviced Kawais I have never had a single ABS flange or jack problem... I never had to tighten a single flange screw."

Franco Skilan
North Hollywood, California

..."The Carbon Jack is a good idea. I have never encountered any problems associated with Kawai's ABS parts... or a broken ABS flange..."

Edmond I .Langlois
Modesto, California

..."Kawai's ABS action parts are perhaps one of the revolutionary products of the century... Kawai has the most responsive action in the industry."

Wendell E .Eaton
Silver Springs, Maryland

..."ABS, yes! The old plastic problems experienced by other manufacturers are gone... I have never had a problem with any Kawai synthetic action parts."

Mark Hullibarger
Manhattan Beach, California

..."In my work with over sixty Kawai pianos at Duquesne University I have experienced no failures or problems concerning Carbon Jacks and ABS flanges..."

David J. Barr
Pittsburgh, Pennsylvania

..."As a technician I have been very pleased with the Kawai action, and I work on all makes and sizes of other brands."

Tom Shaw
Charlottesville, Virginia

..."I found Kawai's synthetic jacks and flanges to be trouble-free under extreme demands..."

Ken Lawhorn
Collinsville, Connecticut

..."ABS plastics are quite welcome... Kawai's commitment to quality is manifestly evident... The school of music at USC speaks highly of the Kawai action."

Horace Greeley
Los Angeles, California

*Acrylonitrile, Butadiene, Styrene

Why Don't Others Adopt Plastic Components?

Kawai is the only grand piano manufacturer to adopt the Carbon Jack as an action component. Why don't other manufacturers use plastic, now that it is proven to be a superior material for the action? There are two major reasons.

First, it is absolutely necessary to scientifically analyze action mechanics prior to changing major components such as the jack. Kawai's modern research laboratory, acoustic specialists and design engineers are continually working on action improvement and acquiring effective proprietary properties. This major capital and personnel investment permits Kawai to offer the latest advancements in technology, including the superior Kawai Carbon Jack, ABS flanges and other action components.

The Second reason is that Kawai capitalizes on the economies of scale. Kawai's production capacity makes the high costs associated with the use of plastics economically feasible. Carbon Jack production is a complex procedure. Kawai has the technology, the equipment, and the experience... Kawai is proud of its leading role in the evolution of new processes that successfully blend old world craftsmanship with modern technology.

Some individuals, including piano engineers and technicians, resist changes even when scientific data verifies superiority. The Kawai Carbon Jacks and ABS flanges are superior to wooden jacks and flanges in all aspects, including key touch, quality, durability and precision. The ultimate proof is in the touch.

Your qualified technician will readily attest to the superior performance and durability of the Carbon Jack and the other plastic components in Kawai's Ultra-Responsive™ Action.

President's Message

DEFINING Ourselves

At this time of year, the PTG membership begins to look ahead to Council session at our annual July convention; discussion of the issues begins in earnest. Membership categories will once again be on the Council agenda. In 1986, Council created our present structure of two categories, namely RPTs and Associates; dissatisfaction with this structure emerged early and by 1989 Council formed a committee to study the categories and recommend possible revisions.

Last year Council acted on the first recommendation of this study committee: to choose one title to identify those who have passed the PTG exam. The title of Registered Piano Technician was selected. Council reasoned thusly: our work to develop the PTG exam is a valuable contribution to the piano service industry; we set a minimum standard for service. We want the public to know who has passed our exam, and to use one title and working to promote public recognition of RPT will be to our advantage. Over time and with consistent use, the piano public will look for the designation RPT when seeking quality service.

The year's Council will take the next logical step and deal with proposals to alter the Associate category. Regardless of what choice is made here, my hope is that the members will again recognize the need to decide.

Do we need to come to a decision on membership categories? Is PTG being harmed by our seeming inability to put this issue to rest? I submit that the answers are yes. First, with this issue unresolved, our focus remains inward. This is an important internal issue which is emotional for some and consumes a considerable share of energy. If we could reach a consensus satisfactory to the majority, our energies and attention could be focussed on other vital concerns: our struggling industry, our programs to educate clients on total piano care, and member benefit programs. If we are continually rearranging the furniture in our own house, we postpone the day when we walk out the door and make our mark in the outside world.

We are weakened by this internal struggle. We will be stronger if we take the time this spring to examine the role of Associate members in PTG. Certainly, they represent our future: these are the next generations of RPTs. Curiously, the numbers of Associate members have risen steadily during a time when enrollment in many piano technology schools has experienced a decline. What is PTG's role in the training of the next generation of piano technicians? Are we, wittingly or not, replacing the schools as a primary training ground? What does the declining percentage of RPTs in our organization mean for our future? Should we actively promote our testing program or simply regard it as a voluntary certification program and not worry over the number who participate?

These are weighty questions and not easily answered. However, it is incumbent upon us to contemplate the future of our profession: who else will if we do not?

The member needs assessment survey done in January will assist Council by furnishing some data on current perceptions of the category structure. Possibly we should all take time to ask ourselves what structure will best serve our profession, our organization and help us reach our goals. For me, the goal is to advance the profession of the piano technician. I will be examining the category proposals to see how they might serve that goal. What is important to you? How will you evaluate this issue?

Whatever our decision, we should strive to discuss our options thoroughly, determine where our best interests lie, decide, and then—most importantly—move on. With our roles in the organization clearly defined, we can meet the challenges ahead with our house united and in order.

KNOWLEDGE ON TAP

1993

Come See What's Brewing

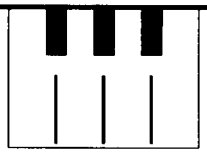
in

Milwaukee

CONVENTION & TECHNICAL INSTITUTE

JULY 14 · 18 · 1993

MILWAUKEE WISCONSIN



Institute Update

Milwaukee offers

OPPORTUNITY...

OPPORTUNITY...

OPPORTUNITY!

You are beginning to make a list of things to do and see while you are in Milwaukee. The top of your list is the Institute and the many varied classes that are offered this year. You will notice that there are a good number of classes for Associates. We trust that you will take advantage of all the learning opportunities that are available in the Institute. Many of these classes will give you great help as you advance in your goal to become Registered Piano Technicians.

Add to your list a stop at the Greater Milwaukee Convention & Visitors Bureau, 510 W. Kilbourn Avenue. This is on the first floor of the MECCA convention center (where the exhibits and many of our Institute classes are located). The Convention center will be most helpful in providing information about the city, places to eat, and any other information you need to make your stay in Milwaukee more pleasant.

What shall we put on our list this month for places to eat? The Hyatt Regency, of course, will be high on your list because of convenience. For breakfast you can order room service the night before, hang a tag on your door, and it is delivered at the specified time, hot and fresh. You can also have breakfast in the Pilsner Palace from 6:30-11:30 A.M., on the lobby level. You can also dine casual for lunch and dinner. The second floor offers the American Restaurant for dinner, 5-9 P.M. only. They offer gourmet fine dining and fresh seafood.

On the top of the Hyatt you will find Polaris—a skytop revolving restaurant for fine food and a famous view of Milwaukee. They are open for lunch, dinner and cocktails. You should make reservations for this one.

The Yamaha team is presenting three classes in the Institute this year. They will introduce you to the Disklavier, showing you the three different types. They will demonstrate the diagnostic programs and tests that are already incorporated into each piano. You will receive basic Disklavier system service information. Their second class, Disklavier Master Class, will be offered to students that have attended the Disklavier Service Seminar. The third class is titled "Dampers the Yamaha Way," where they explain that stopping the sound is just as important as starting it. You will receive information on how dampers work, and come away with a better understanding of this most important part of piano restoration and service.

Danny Boone, from the Heart of Texas chapter, will present an outstanding class on reliable grand regulation. Danny will show you how to prepare the piano and action for regulation and will take you through each step to completion on an actual grand piano and action.

Ed Dryburgh will show you how to use the Superglues without getting "all stuck-up." Seriously, these products are some of the most useful new glues in our toolbox. You will find hundreds of uses for them and begin to wonder how you could have ever done without these products that make life easier.

Next month our Annual Directory will be in your hands. As you search it to see if your name is in it, we will include your convention registration form and encourage you to register early.

We have so many exciting things happening in Milwaukee that the Hyatt and Mark Plaza will fill up fast. You will be scrambling all over town to find a place to stay.

In Milwaukee, you will find knowledge on tap. We invite you to come be with us to see what's brewing there.

Gary Neie, RPT
1993 Institute Director

Come Early —Stay Late for a Wisconsin Family Vacation

By
James & Linda Marten
Milwaukee Chapter

Milwaukee and its outlying areas provide dozens of opportunities for participants at the 1993 Institute who want to combine business with pleasure. According to the Rand McNally Places Rated Almanac, Milwaukee is rated in the top 6 percent of the 329 largest cities in the nation in the arts and seventh among the top twenty cities for recreational opportunities, including six private and fifty-five public golf courses and more acres of parkland per person than anywhere else in the country. In addition, Wisconsin is home to an extraordinary variety of sites and attractions—natural and man-made—that makes it an excellent choice for family vacations before or after the Institute. Here are a few of the places and events that make Milwaukee "A Great Place on a Great Lake!"

The annual Great Circus Parade winds through the streets of downtown Milwaukee on Sunday, July 11, just prior to the convention. It includes hundreds of clowns, dozens of bands and scores of restored circus wagons from the thirty-plus turn-of-the-century circuses—including Ringling Brothers and Barnum and Bailey—who wintered in Wisconsin. Pulled by giant Percheron and Clydesdale horses, the wagons are the highlight of a summer-time event for hundreds of thousands of people. Most of the wagons are housed in the Wisconsin State Historical Society's Great Circus Museum in Baraboo, which is located about two hours northwest of Milwaukee.

Summer is also a time of ethnic festivals on Milwaukee's lakefront, and attendees of the Institute who stay in town for a few more days will be able to enjoy Germanfest, which lasts from July 23-25. Germanfest, the largest three-day festival in the United States, offers non-stop German music, entertainment, folk dancing, cultural exhibits, souvenirs, fireworks and food and beverages at the Summerfest grounds on the cool shores of Lake Michigan.

Just 90-minutes—by car or by Amtrak train—south of Milwaukee lies the Cream City's big sister and the third largest city in the United States—Chicago. Visitors can watch the Cubs at historic Wrigley Field, shop along glittering Michigan Avenue or State Street, tour the world famous Field Museum of Natural History, the Museum of Science and Industry, and the Chicago Art Institute, or take in the view from the world's tallest building—the quarter-mile-high Sears Tower. For more information on the Windy City, contact the Tourist Information Center at 310 S. Michigan Avenue, Chicago, IL 60604.

for those who favor more bucolic settings, a short drive up Wisconsin Highway 83 takes tourists to the beautiful Kettle Moraine Forest, whose landscape was sculpted by North America's last glacier over 10,000 years ago. The Kettle Moraine Scenic Steam Train provides a nostalgic eight-mile round-trip through the northern branch of the Kettle Moraine on summer Sunday afternoons and includes a visit to an 1890s railroad depot. The best view of the forest is from the steeple of majestic Holy Hill, a shrine that has attracted pilgrims since the 1850s. Located in the center of the Kettle Moraine five miles east of Highway 83's junction with Highway 167, Holy Hill provides both religious and scenic inspiration and is administered by the Discalced Carmelite Order of Friars. For more information on these sites, contact: Kettle Moraine Scenic Steam Train, 414-782-8074, and Holy Hill National Shrine of Mary, 414-628-1838.

Among the most spectacular sites in Wisconsin are the Wisconsin Dells, which Indians believe were created by a giant serpent, but which geologists claim were carved out of the sandstone hills by the Wisconsin River. Whatever their origins, the result is a magnificent seven-mile stretch of the Wisconsin River, where cliffs rise 100 feet above the water. To see the river, you can take a leisurely boat tour or an action-packed trip on the "ducks"—amphibious vehicles that go from land to water and back again with ease. More adventuresome souls can rent a canoe and paddle the Upper Dells. Although the Dells

"This turn-of-the-century circus wagon is just one of many you can see as the annual Great Circus Parade winds through the streets of Downtown Milwaukee, Sunday, July 11, just prior to convention..."

provide an impressive example of Wisconsin's natural beauty about a two-hour drive from Milwaukee, they are also the site of tourist developments such as amusement and water parks, greyhound races and shopping malls. More information on both the natural and the man-made attractions of the Wisconsin Dells can be obtained from the Wisconsin Dells Visitor & Convention Bureau, 701 Superior Street, Wisconsin Dells, Wisconsin, 53965.

History, theater, architecture and tourism come together in southwest Wisconsin's Spring Green-Mineral Point area, a three-to-four hour drive from Milwaukee. Mineral Point, Wisconsin's third-oldest community, was founded in 1827 by lead prospectors. Cornish miners came to work the lead mines and, in the early days, lived in crude dugouts called "badger holes"—hence, Wisconsin's nickname, "The Badger State." The Wisconsin State Historical Society has restored several miners' homes in the Pendarvis Complex, while other restored 19th century buildings are located nearby in Shake Rag Under the Hill. Mineral Point is home to a number of bed and breakfast establishments and shops offering arts, crafts and antiques.

Just up the road from Mineral Point in Spring Green, is where a disparate group of attractions are located. The world-famous House on the Rock, an eclectic collection of history, natural history and architectural exhibits, perches atop a 450-foot rock outcropping. Less bizarre are the group of buildings designed by the founder of the "Prairie School" of architecture, Frank Lloyd Wright, including his long-time home, Taliesin. Finally, each summer the professional American Players Theater offers the works of Shakespeare and other classics in a wooded, outdoor amphitheater. For more information on these and other Spring Green attractions, write to the Spring Green Chamber of Commerce, PO Box 3, Spring Green, Wisconsin, 53588.

Far less settled but equally scenic is northern Wisconsin, which is dotted by national and state forests. Rhinelander and Hayward, once logging camps, are now centers for resort districts. Inns, fishing resorts and bed and breakfasts are plentiful in this rugged half of Wisconsin, where bears and wolves still roam and where hundreds of thousands of deer are hunted each year.

One of Wisconsin's most delightful regions is Door County, the "thumb" of northeastern Wisconsin between Green Bay and Lake Michigan. Located about three hours north of Milwaukee, the seventy-mile-long peninsula got its name from French explorers who labeled it *Port des Morts*—Door of the Dead—for the battering waves that drove dozens of ships to the bottom of Lake Michigan. Door County offers 250 miles of

coastline (more than any other single county in the United States), including Cave Point County Park and Whitefish Dunes State Park; cherry and apple orchards, where visitors can pick their own fruit in season; Door County Fish Boils—with famous Door County cherry pie for dessert; shopping at exclusive boutiques and fine dining; relaxing bed and breakfasts and affordable weekly house rentals; ferry rides to Washington Island off the northern tip of the peninsula and to Rock Island, now an uninhabited 905-acre state park with primitive camping facilities that permits only backpacking and bicycles; and Peninsula State Park, with its improved campsites, its restored lighthouse and the eighteen-hole Peninsula Park Golf Course. Information of Door County attractions and facilities can be obtained from the Door County Chamber of Commerce, PO Box 406, Sturgeon Bay, Wisconsin, 54235-0406.

Finally, it's not surprising that Wisconsin's 450-miles of Great Lake shoreline offers great opportunities for "deep-sea" fishing. More than 600 charter vessels provide half-day and full-day excursions from dozens of Wisconsin ports. For a copy of the "Wisconsin Licensed Fishing Guides for the Great Lakes and Inland Waters," call 800-372-2737.

These are a few examples of the fun that Wisconsin offers to those technicians and their families who make the 1993 Institute into a family affair. For free Wisconsin travel literature, call 800-432-TRIP; for travel information call 800-372-2737.

1993 Convention Offers Private Tutoring

Sign Up Early —Class Periods Available Are Limited

In a recently published book titled "Benchmarking: A Tool For Continuous Improvement" by Leibfried and McNair, the authors describe a technique first used by Xerox in the late 1970s when it found itself losing market shares to competitors. While the concept may not be earth shattering, the results can be.

In its simplest form, Benchmarking means taking an objective look at how you measure up to the competition. By employing such a technique, businesses are able to assess their competitiveness and make necessary corrections and adjustments to maintain a competitive edge.

As piano tuner-technicians, most of us tend to be very isolated from our competition, thereby remaining ignorant of regional and national benchmarks.

Private tutoring will once again be offered this July in Milwaukee, and you will have the opportunity to compare your skills against the masters and benchmark with the best.

Complete the registration form below and mail to:

Fred A. Fornwalt, RPT
1993 Tutoring Coordinator
1333 Logan Boulevard
Altoona, PA 16602

Or call for more information:
814-942-1489

name _____

address _____

city _____

state, zip _____

phone _____

number of sessions _____

topics _____

Technical Forum

Preventing Menu Fatigue

Jim Harvey, RPT
Editor

I recently mentioned my appreciation of the amount of participation (articles) I've received for the *Journal*. I also mentioned that I was trying to build an archival library, to permit printing certain types of articles during certain times of the year. This idea is not working out too well. A review of my files indicates that I have a number of articles that should be out of my hands, and into yours.

What about the Forum?

I had originally wanted to return this column to the readers, for tips, technical questions, or even a good argument over technical theory every now and then. My involvement was to be that of providing responses, either from myself or other resources, and in general, maintaining continuity within a given column. For whatever reason (and unlike the feature-length articles I have been receiving), the proper type of input to support the column has not been forthcoming. As a result, instead of acting as an editor and screening material for the Forum, I've become another writer, and forced you into reading (or skipping) my "good ol' boy" style of writing. My generation of articles from scratch was not the intent behind our executive board's redefinition of the position from *technical* editor to *editor*. So, other than next month's column, which will feature the 1993 NAMM show, the next several issues will feature a very terse Forum article, and the magazine "filled out" with a number of full-length articles from different authors. This should help prevent menu fatigue on your part, and burn-out on mine, since I'll be doing what I'm supposed to be doing anyway — assisting and editing the efforts of others. I trust you'll enjoy the results, as well as the diversity of subjects.

Before you run out and celebrate, I should mention that the Forum is not going away! I have several topics under development in the background. In the meantime, please remember that I need ammunition for this (your) area of the magazine. Even idea "seeds", in the form of one or two paragraphs, is enough to trigger additional discussion on a given subject.

New series on regulation

A couple of months ago I asked whether there were any martyrs in our midst who were crazy enough to start a new series on grand regulation. I'm happy to announce that, beginning this month, our resident crazy for the series will be Don Mannino. I should tell you that, in spite of Don's best intentions, I will not hold him to generating a column *every* month. If however, with his combination work and travel schedule for Young Chang, he still finds time to complete an article every month, then so much the better.

All things being non-equal

Apparently my inquiry about "other" temperaments has hit the mother lode in terms of member interest. I received a number of letters and phone calls in support of just such an area of the magazine. One caller mentioned that if no room could be found in the *Journal* for these discussions, then they(?) were going to publish a separate newsletter or magazine that *did* include discussions of historical, (or non-equal) temperaments. Enough said. If the interest is there, we'll find the room for the words. Just give me a while to figure out the best approach to handling this, including a possible moderator for this section of the magazine.

In conclusion, and on a very sad note, I became aware of Eleanor Ford's passing well after the fact. While there was an "In Memory" section by Eleanor's good friend Agnes Huether in the Auxiliary Exchange (October 1992 *Journal*), I failed to see it. And since Eleanor was perhaps as well (or better) known to technicians than to the Auxiliary, it occurs to me that there may be others who are, even now, unaware. I'm grateful to member Sam Powell of the Washington, DC Chapter for the accompanying memorial.

A voice we all knew and loved will no longer be on the other end of the phone at Ford piano supply, that of Eleanor Ford. Although her husband John is better known by us for his knowledge of the history of the piano industry, and his pursuit of finding innovative tools and supplies for us all, it was Eleanor who knew us and our needs. After a prolonged illness she made her passage to the afterlife

on August 20th 1992. She is survived by her husband John, and four children: John Jr., Brent, Joanne, and Richard, all of whom have been active in the piano business themselves. Eleanor will be remembered as the personal binder that made you feel connected when you called. There was always a connection made and acknowledged when you called and she answered. Eleanor, we were glad to know you, and you will be missed.

J

Between You, Me & the Tuning Pin

Bill Ballard, RPT
Contributing Editor
New Hampshire Chapter

TIGHTEN UP [redacted] JACK!

Here's the second in this series on tuning subjects, arranged in a utilitarian order. Last month we straightened out which ear we wanted to listen through, and made sure there were no illusions as to the purity of the sounds we hear. This month there are only two things on the list: checking plate bolt and tuning pin tightness. Some of you black belt technicians will grumble that I haven't tightened anything unless I've been all the way down to the caster socket fasteners. This is no short list, however, as it covers most of the business of tuning stability. Let's not forget, by the way, that tuning stability depends on a lot more than just pinblock grip and plate fasteners, namely structural integrity, climate stability, and the piano's workload (both quantity and intensity). Of course, nothing stabilizes a piano faster than regular tunings, as I found out when I convinced my best pianists to let me see their pianos monthly. However, when you put your monkey wrench on that pin, tuning pin tightness has everything to do with it.

The subject of tuning pin torque is receiving increasing scrutiny in the Journal. It may seem as though, for every article on how wire moves from tuning pin to speaking length, there have been ten on how to stretch an octave. There has been no lack of ideas, however, from Newton Hunt (PTJ 6/79), George Krippenstapel (PTJ 4-6/83), Dan Bowman (PTJ 2/89, and this Fall as well), Rick Baldassin and Norm Neblett (PTJ 4/89), Peter Wolford (PTJ 2/90), myself (PTJ 2-3/91), through Nick Gravagne (PTJ 1/93). I'm looking forward to more from Dan Bowman. Despite the differences in perceptions and theories among us, there is a common experience which can be clarified by further explorations. Hopefully, the pages which follow won't add to the task of other writers.

Iron Meets Wood

The piano depends on these two structural members, the cast iron plate and the wooden frame (that is, the back in the vertical and the rim in the grand). Unfortunately each does separate work and neither can do much good unless it is well coupled with the other. The plate's cast iron provides the rigidity required to carry the high string tension load. In fact, with iron's compressive strength that load could easily fit within the cross-section of one plate strut. Instead that load is spread out over a 4' plane, and it's not all lined up in the same direction. While the wooden frame has some structural strength, it leaves the load carrying job for the plate. The frame, being made of wood, is there to anchor the other wooden components (the soundboard and, in the vertical, the pinblock) in a way that iron can't. When the wooden half of this assembly is compelled to move by changes in moisture content, the iron half is there to stabilize it, but only if the two have a firm grip on each other.

You'll be glad you did run around those plate bolts, as I was in one case which falls in the category of "things which go 'burp' in the night". One mid-July, the old Steinway B of a local private school developed a groaning sound, the kind which is part-way between a rattle and a hum. This sound usually comes when one case part traps some of the piano's acoustical energy and is close enough to another case part to buzz against it and not be damped by it. I immediately checked the lid prop on the plate strut, and the fallboard against the stretcher, but no cigar. I had to call in assistance at the keyboard before I could lay my hands on it. Where of all places was this groan? Believe it or not, one of the places I pressed my hand on was the plate at the inside corner of the rim, and here I found a lag needing an 1/8 turn ! (Gee, I checked those bolts just last winter...).

It will surprise you the number of pianos on which the plate bolts will have an 1/8 to 1/4 turn on them. In the verticals, we tend to forget the plate screws along the bottom. This, plus the fact that there are fewer down there than in the pinblock area, makes them all the more important. Some imported grand pianos have a firm "reefing up" for the screws around the rim, and a softer feel for those around the pinblock. Hopefully this is an indication of poorly chosen drill bits rather than the condition or original quality of the block material.

My tool bag carries brace bits for both Phillips head and straight screws. Mount these in the head of your tuning hammer, and (especially with the straight bit) you can easily develop more torque (that is, tightening power) than either the bit or the screw head can take. You shouldn't need for the bit to pry apart the screw head's slot and dig a trench across the plate finish in order to pass the tightness test. You can, if you want, put an eagle eye on the screw slot to catch the earliest sign of a slot getting bunged out. But all you need to

remember is that, with your tuning hammer's 12" handle, the torque is miles/tons beyond what the ordinary screwdriver can deliver. (I also remember the morning a brace bit jumped a screw slot and headed for my right eye.)

You'll do well to buy your straight brace bit at a hardware store which has a whole bin of them. Here you can select the widest blade to best match the #24 and #26 wood screws found in our line of work. As for the lag bolts, I carry 1/2" through 3/4" in 3/8" drive. The 1/2" socket nests in the 11/16", the 9/16" nests in the 3/4", and the 5/8" joins them on a 4" carriage bolt with a wing nut. Any inaccuracies in bolt head size can be overcome by a slight lean in the socket of the loose fitting size. Crescent wrenches aren't much good around the grand rim because of the lack of turning space. (Cupola-style contours eliminate them immediately. You will need an adjustable crescent wrench for the uprights using more than a 3/4" head lag. These oversized ones are generally of odd dimensions.

A Firm Handshake

All your tuning acuity and theory won't amount to anything unless you've got enough pinblock grip. Nick Gravagne's chart in his January installment shows the broad range of things (and, yes, it would be fun to track down the original author). We each have our own personal preference as to pinblock grip or torque, and in general this varies with what we feel comfortable doing with the hammer. However, what a particular piano will hand us can easily be very different from what we like. As ever, the piano (and the customer) is always right! I'll be back on this matter after a few paragraphs.

But there is a bare minimum. I used to be a USMC Drill Sergeant about pinblock torque, and I still tell the piano's owner that I won't guaranty a tuning beyond the first two minutes on a block with less than 50 inch pounds, measured during the heating season. Anything less and the piano is probably being held in tune by string friction alone —a situation that makes my skin crawl! Although in actual tuning, things usually go so fast we don't feel the much-discussed release of torsion, this is what reports the pinblock grip to me. Checking in slow motion, I want to feel the pin to twist, then turn. The block's grip should be able to withstand a nominal amount of torsion in the pin's length, and I reckon that such a grip will be greater than the tug of string slugged by a hammer, any day. I look for a firm handshake any time I meet a new piano.

Actually, it doesn't need a whole lot more than 50 inch pounds. A while back, I was surprised to see a tuning on a pinblock grip of 80-90 inch pounds stand up under the program of a powerful concert pianist. (The

unisons survived my test blows that afternoon, but I wasn't going to resume breathing until I could get on-stage after the concert.)

Drive We Must

Beyond the minimum, however, you might also want to jack up the pin friction, say to correct the balance between pin friction and its companion string friction. (And I'll get back to this, too.) What are your options? Drive the pins deeper into the block, dope the block, or repin (with or without new strings, block or belly). In my twenty-odd years, I have yet to dope a piano. My moral compunctions and unfounded suspicions aren't large enough to push me up on a soapbox on this one. It's just that I've always been happier with the alternatives. Over that same time, I have driven a couple hundred sets of pins, and many of those pianos still feel fine fifteen years later. That 1/8" to 3/16" at the bottom of the pinblock hole, which had never had to do any work during the piano's first 50-80 years, has an amazing amount of strength in it. In the cases where it can't provide a short term solution, it'll let you know immediately with a 25 inch pound gain instead of an 80 inch pounds.

What tools do you need? Use a regular carpenter's hammer. A 2# stringing sledge is great for driving in an initial 2" of pin, but you're only going at the most 3/16". The small tuning pin setter is indispensable for making each pin stand out above its neighbors. It's handle also prevents the pin from jumping flat when the hammer's impact on the pin momentarily unlocks the pinblock's grip on it. Without it, your next step will be a chipping instead of a simple rough tuning. And if you've never done this before, you'll learn the first time not to expect to get out of a rough tuning before the final, fine tuning. On roll-top Wurlitzer spinets from the 50's and Hardman MiniPianos, you may need a 1/4" punch to land your impact on the lowest bass pins tucked deep into the cabinetry.

Do verticals need to go on their back for the pin driving? Don't be silly! As with stringing, grand pinblocks need to be supported from underneath. This is serious business. To overlook this is to rupture the block, get dragged into court by the piano's owner, and have to pay out of your own pocket for your worst competitor to replace the block which originally only needed its pins driven. My favorite means of support (visible or otherwise) is the "Low-Boy" scissors jack, standard on Nissan autos. I've gone through three Nissans, and all three jacks do piano duty. (Their little stickers locate the auto chassis' lift points but say nothing about piano action cavities.) The jack gets topped with a 6x8" pinblock scrap. You'll want to make sure that you're lifting under the block, and not the stretcher or the plate flange: each of which can be lower than the block and prevent solid support for it. The jack should be tight enough only that when you grab it and shake, the whole piano moves. Bowing the keybed down is not part of the procedure. Finally, my lawyer asks that you & me do two small favors: before you start to drive a given section, confirm that in fact the block is under it and then make a mental note on the top side as to which pin is the last of that section to be covered by the block's support.

Here are a few points. I was serious when I said you don't need a bigger hammer. Often, if the block is in aged but good condition (especially if this is a 19th century piano with tapered pins), using the full amount of drive will get you a piano equally untunable because of "tightpinitis". The best feeling pin driving is done with a light to medium tap. With a uniform tap, the looser pins go further in than the tighter pins, and *voila*—you'll get a roughly uniform fit. If the block is really loose, the pins will quickly drop all the way, so you'll need to keep a careful eye out for coils and wire wedged into the plate.

You should make sure that you have a pinblock worth driving. In a vertical, delamination is easy to spot if the manufacturer didn't paste plywood or decorator felt on the back's top. (Sadly, most manufacturers want to keep this hidden.) In a grand, a delaminated block can't be properly supported. Your first sign of delamination here, is a bulging in what should be a flat plane on the underside of the block panel. You can also listen to the whisper sound your fingers make as you run them along the underside of the panel. A delaminated panel will sound light and flaky (like the crust of a croissant), and a solid one, substantial (like meatloaf). With the action out of the way, you can even examine the bottom end of the tuning pin hole with a mirror for internal splits. You should by now have confirmed that if the pins up above have room for drive between the coils and plate, the pins have at least that amount left in the bottom of the hole below. When the pin comes out the other side of the panel, it gains no further torque from the open air below.

We all know about supporting a grand pinblock, but make sure that what you are jacking up from is a solid keybed. A Brambach or a Winter keybed built like a door with rails and stiles, may have most of its area in 1/4" plywood panels. The jack will need some lengths of steel angle to span such interrupted construction. Finally, I'll relate, in the public interest, that two pianos (of the many I've done) came out of properly supported drivings with cracked blocks. No further comment other than they're both still staying in tune, and both were runt grands (one a Kimball and the other a Knabe).

Repinning, unlike doping or driving is not the kind of remedy which only delays the tuning by an hour. Regardless, I'll add a few points. The repinning (with or without new strings) that still feels tight after 20 years is rare, so plan ahead. If you've got six months to a year before the job, put in a few oversized pins and see how they stand up. This is valuable help in picking the right size. When I'm restringing with oversized pins, I'd much rather use a 3/0x2-1/2 than a 4/0. The extra 1/8" makes use of the deep end of the pinblock hole, as you would with later driving the pins. Using this grip allows you to get by with a 3/0 where a larger size would have unnecessarily stressed the wood.

Wrestling with Gorillas

But, just how much torque can we handle? In general, if you can't easily adjust a 7th or 9th partial in the 4th octave, the pinblock is working against you. However that by itself leaves a lot unsaid. Pinblock grip has everything to do with how smoothly the tuning will go, which in turn bears on how solid the tuning will be. The reason for this chain of effects is that for all of our talk about setting the pin and the string, it really comes down to that First Law of Nick Gravagne's mentor: the tuning should be accomplished with a minimum amount of motion. Standing in the way of that desired efficiency are two things: tuning pin friction (i.e., pinblock grip) and string friction.

It's certainly possible to do a solid tuning without a conscious perception of the release of torsion in every pin turn, just as harmonious tunings can be done without checking in on the dimension of partial tones. Also, when a particular pass on a given pin doesn't need the bottom end of that pin to turn, then pinblock grip is irrelevant. On some pianos, a high string friction will allow the tuning's mechanical system to easily tolerate amounts of residual pin torsion. Even without bulky string friction, there are many times when a good unison is possible without having to disturb that bottom end. Usually these are situations in which the adjustments in tension are miniscule, or when the tension differentials among string path segments are still small enough

that they can absorb wire changes from delayed releases of pin torsion.

But even in these situations there's still a point in the first tuning of that pin where you may decide that regardless of how far the pin's wire change until now has gone towards the desired change in the speaking length, the twisting of the pin has gone deep enough into the block that it must be continued all the way to the bottom. There is no left-brained formula which turns the little yellow warning light on. We simply know that this particular pass is not one to be done from the plate level of the tuning pin, on up. Beyond this point, turning the bottom of the pin is very much a part of making that string and pin happy.

Tuning pin tightness has to be dealt with on two counts. First, it affects (and usually dictates) your hammer technique. This can be especially frustrating if you're new at it and like to do things in slow motion. Your hammer technique may determine whether you prefer torque in the range of 60-80 inch pounds, or from 100-140. However, the piano has right-of-way over your preferences. If you like a loose grip and do a significant amount of hammer manipulation by flopping your wrist and delicately impacting the tuning pin head with a loose fitting hammer tip, things are going to get increasingly difficult as the torque climbs above 100 inch pounds. You'll find that the force required to overcome the pinblock's grip only in a solid connect between arm, hand, hammer, tip and pin.

As The Pin Turns

At this point, you'll also be wrestling with the second consequence of high torque. When turning the entire pin, pinblock grip is very important, because the higher it is, the more wire will have changed before twists come to turn. That amount of wire change at the pin sorts itself into two quantities: the amount we wanted to move at the speaking length for the desired pitch change, and the remainder. While it's the former that we concentrate on to achieve the harmony, the latter makes the critical difference between a solid and a wobbly tuning. The toughness of the tuning depends on a reasonable matching of the wire change at the tuning pin and at the entrance to the speaking length. If you don't see to it that any change at the pin is being shared equally amongst (or more to the point, being distributed across) the

segments of the string's path to the speaking length as you tune, then one good blow from the pianist later on will do it for you. This remainder (the latter) has to be cleaned up without disturbing the former.

The difficulty in cleaning this up is that we have no direct way of measuring what's going on between the pin and the speaking length entrance; we can only infer it. And there's a limit to this. As I've said in a previous article on this subject, as long as the tuning pin friction is higher than the string friction, the amounts of slack (and you can imagine slack as either positive or negative) are usually manageable because of the immediately discernible relationship between changes in the tuning pin and at the speaking length. We turn the top of the pin, pitch in the speaking length changes, and continue to do so while the turning of the pin reaches its bottom. If string friction is higher, the progress of the slack between the tuning pin and the entrance to the speaking length becomes a series of invisible transactions in which amounts of slack are traded as toll fees at each of the points of string friction. The movement of the tuning pin tells you nothing about these intermediate transactions. And unless the amount of slack is enough to pass by every last one of these points, the sound of things inside the speaking length won't either.

Gaining the Upper Hand

All of this brings us to a final convolution: knowing the danger lying on the tight side of things, would you ever want to move a passable 60 inch pounds to a tougher 120 inch pounds? The answer is yes. Why, you may ask? Regardless of your technique, you'll need the tuning pin friction to be greater than the string friction.

There's a good reason for this. Do you remember the three monkey wrenches (PTJ 3/91)? We feel wire change at the pin, and we hear it change in the speaking length. But we can neither hear wire change at the pin nor feel it change at the speaking length. Correlating what's happening at both places (the beginning and end of the "pipeline") would be useful as it would allow us to learn and control the reflexes of the system transmitting changes at the pin on to the speaking length. But converting the bouncy feeling of the tuning pin's torsion to the sound of beat rate animation is a little like comparing apples and orangutans. Secondly, pin friction and string friction have no connection to each other. While we have direct control of changes at the pin, what happens at the speaking length is controlled by something entirely out of our hands, namely the string friction. We would be on Easy Street if we could move string along to the speaking length by loosening or tightening the friction grip on the

string. But that's one for David Stanwood. The third monkey wrench is this notorious crap shoot in which the tuning is either easy or hard depending on which of the two frictions is on top.

Our only way of moving something across a bearing point is by creating a difference of string tension between the two sides, the force of which will be greater than the friction of that bearing point. We do this either with a pin twist at one end or a test blow at the other. In fact, string friction at these bearing points is like a turnstile: you can't go through without coughing up the required tension differential. Of course what we're actually doing is winding wire on or off of the pin, and in or out of the speaking length, but what it feels like is that we're using the tuning pin torsion to bump the string friction. What the string friction will let the wire do has nothing to do with what the pin friction is. But if we gauge it right, a certain bump on the tuning pin will cause the correct amount of wire to jump across the string friction, to produce the desired change in the speaking length. We have no way of gauging it if a commanding string friction put the transaction in a black box.

Try correcting the balance between tuning pin and string friction someday. You'll like it.

Coda

If we think tuning is a daunting challenge, we should count ourselves lucky to be human beings. Of, course, the New Hampshire Chapter's Granite Action newsletter has reported in various *April* editions on joint venture between Japan's Mitsubishi conglomerate and our own Inventronics. The Robo-Tuner as first introduced in 1988 was primitive, requiring an attendant to move the output socket from pin to pin and lacking the loop to detect string breakage. It has rapidly advanced to the point where it can splice a bass string without removing an agraffe. Meanwhile, back in the real world, I recently witnessed a demonstration of a mechanical tuning machine put together by a very clever engineer with what may be the best technology available. Ted Knowlton, an engineer recently retired from N.E.C. Electronics, started with an electret mike feeding piano sound to a digital sampler. Once sampled, the piano sound is converted to a form usable by the digital signal processor and a PC computer. The PC runs a closed loop servo control with the mike at one end and a motor driven tuning pin socket at the other. The gear-box electric stepper motor can execute a movement of 1/80,000 of a turn. The motor is suspended by springs above a grand pinblock area. Its only other firm connection to the piano besides the tuning pin is a bar clamped to a plate strut. A strain gauge built into this bar tells the PC how hard the motor has to work to execute the command. This plus the change in pitch heard by the microphone, determines the PC's next command to the motor.

At the local chapter meeting, I didn't get to see the set-up for the array of equipment, but boot-up time was about twenty minutes. Another forty-five minutes was spent on two pins of one note, as pitches zig-zagged up and down by amounts that would make any but a green-hand cringe. Two of us humans tried the pins and found them to be of moderate torque. Among other subtleties, the strain gauge may not have been distinguishing between pin twist and turn. I don't intend to discourage Mr. Knowlton with this description. On the contrary, I was very proud of the technical challenges he had already met. I would like to close with this thought. If so much of what goes on in the mechanics and acoustics of a tuning is beyond the grasp of our left-brains, at least we actually have the right side of our brains to actually do the work!

Next month I'll be back with mutes and the rough tuning. Meanwhile, keep those cards and letters coming, folks. I'm in charge of a running forum on the tuning side of things, as was Dan Bowman before me. If you have a question or comment on an article (or simply out of the blue), a tip you'd like to share, or an article to submit, send it up to:

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J

Good Vibrations

Stringing: Neat Coils & Other CONSIDERATIONS

Nick Gravagne, RPT
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New Mexico Chapter

Without doubt one of the first signs of a nice stringing job will be found at the wire coils. Although there are minor differences in opinion and practice here, it is generally agreed that each coil should include three full turns around the pin when tension is on the string; that all tuning pin eye holes should be similarly aligned; that the end of the wire (that inserted in the pin) should not completely run through the pin and protrude out the other side; that the becket, that sharp bend in the wire where it enters the pin, should be pinched snugly to the pin; and that the three coils should be pulled up tight against each other. This is, of course, an ideal. Minor and random transgressions can be tolerated. But a wholesale disregard for the above criteria produces ugly work. Beyond the visual, such bad work is usually accompanied by tonal problems, not only due to the mishandling of the wire, but in that such carelessness in stringing is usually indicative of overall carelessness in every aspect of the work.

Non-protruding wire ends

For every pin to have three coils, it follows that the eye holes in all pins will be aligned parallel to the front stretcher. So two criteria are met at once. For the sake of this article we are going to assume that the skill of turning coils onto a tuning pin is a given, and that what we are seeking to clarify is the approach to uniformity. Still, a few things regarding coil making need to be mentioned.

Photo 1

First, the becket in the music wire does not need to be made with pliers. This bend can easily be introduced as the first coil (of the final three coils) is produced. Typically, the tuning pin is held in fingers and thumb as shown in **Photo 1**. The end of the wire is inserted such that the wire end is just showing through the opposite hole. In order to keep the wire in place so that it doesn't either slip too far through the hole, or else fall out, a slight twist is made on the pin to lock the wire in place. A stringing crank is then placed on the pin in order to turn on the coils.

As the first coil is produced, the sharp, cut end of the wire will recede a bit back into the pin hole thereby preventing it from sticking out in a prickly fashion. Protruding wire ends, aside from making the tuning pin area look like a silver porcupine, make turning coils more difficult and sometimes painful. Moreover, protruding ends seem to scream, "Hey! Check out the becket alignment on *this* job!" Where the wire ends do *not* protrude, there exists at least a subtle deception of uniformity, even where uniformity does not exist. Protruding ends, however, look like tiny hands of two hundred plus clocks — all out of sync.

Certainly this is my opinion, and I have seen stringing jobs that were quite nice in every other respect. Virtually all old pianos were hand strung, and protruding ends cannot be found in the original work.

The actual technique of coil making is a visual and practiced one. Trying to outline every finicky detail might be an interesting exercise for students of technical writing but would be a gross waste of time here. Besides, I have seen no two stringers make coils quite the same way; for that matter, no two tie their shoes quite the same way either. If you are brand new to stringing, consider learning the basic technique from someone who knows, and then practicing with a box of tuning pins and music wire. There is now available a small hand held tool designed for making coils on music wire (check your supplier). I have tried it, and it seems to work fine. Our concern here, though, is for uniformity of coils. I can tell you what works for me.

How to get three coils on every pin

On most pianos one length of music wire is anchored to two tuning pins. In the stringing process a certain number of coils is turned onto one pin that is then driven into the block. The wire is cut to some predetermined length after which a certain number of coils is turned onto the second pin. This second pin is then driven into the block. The trick in ending up with three

coils on both pins is to initially make fewer turns on the second pin than were made on the first. In my own practice, the first pin is driven into the block having two and a half coils. With this many coils the tuning pin eye hole sits parallel to the stretcher when the pin is driven. The second pin, however, is driven into the block having only two coils, but also with the eye hole parallel to the stretcher. Except for small adjustments, all pins are driven into the block such that the eye holes are parallel to the stretcher; the first pin having two and one half coils, and the second pin having only two coils (**Photo 2**). Obviously at this point the string itself is slack. Working the stringing crank so as to apply the correct number of coils will take a little thought and practice, but the technique is quickly grasped.

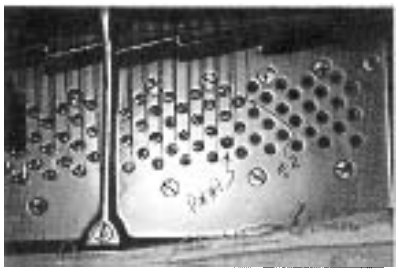


Photo 2

When the pins are so oriented it is time to put tension on the string. This is done by turning the *second* pin (the one with two coils on it) a full turn until the eye hole is once again parallel to the stretcher. As the second pin is so turned, two small but significant events will take place. A small length of music wire will pull around the right side of the hitch pin, and the coil on the first pin will close up a bit tighter, though not completely tight. Now it remains only to make that half turn on the first pin. When done correctly three tight coils will be produced every time.

Gauging the cut

Now it is clear from the forgoing that the string must be appropriately cut so that both pins will end up with three coils. Most stringers lay the uncut string in the palm of their hand, or across the base of the fingers, and gauge the length of cut relative to the appropriate pinblock hole. That is, the wire extends a few inches beyond the hole. Trial and error will reveal the proper gauging technique. But once found, consistency is the key to uniform work. Note that since the pinblock hole is critical to the gauging process, each hole must be viewed from exactly the same vantage point. This will be impossible if the hole is seen as a two-dimensional spot on the plate. If however, the hole is seen AS a hole rather than a spot it will have depth. Thus, the stringer must learn to "look down the hole" in order for consistency to occur. Proper lighting is necessary for this to work.

So, then, a typical scenario would be like this (let's assume a right-handed stringer). The end of a size 17 wire is run through a hole in the agraffe and inserted into the eye of a tuning pin that is held in the left hand. The wire end is not allowed to protrude. A slight twist is made on the pin so as to lock the string in the pin. Two and one half coils are cranked on, after which the pin (pin number one) is driven into the block such that the eye hole is parallel to the stretcher. The string is then routed rearward over two bridge pins, around the hitch pin, back over another set of bridge pins, and up to the tuning pin area for cutting. The string is then pulled tight by hand in order to gauge for cutting. I gauge the length of the cut by laying the string in my gloved hand. **Photo 3** shows the relationships. (For the moment ignore that the string being gauged and cut is a bass string.)

Photo 3

In order to make this photo clear, a length of quarter-inch dowel has been inserted into the appropriate pinblock hole. This dowel represents how I "eye things up" — how I "look down the hole" relative to the forefinger of my left hand. The dowel is not used when gauging for ordinary music wire, but I actually do use it in every bass pinblock hole since it aids in consistency. You see, it is possible to cheat a bit for equal coils in the tenor and treble areas by pulling the string around the hitch pin. This isn't possible in the bass. Notice in the photo that, in order to achieve the proper number of coils, the string is being gauged relative to the groove between the third finger and pinky. This "gauge point" changes in different parts of the scale. How to know when? Look at the last set of coils. If, after tension, there are more coils (partial coils actually) on one or both pins, shorten the cut by a tad. If everything is done consistently, the coils will tell you when to adjust for length of cut.

After the string has been gauged and cut, it is run through the agraffe hole, after which two complete coils are cranked on the second tuning pin. The pin is driven into the block such that its eye hole is parallel (more or less) to the stretcher. In order to tension the string, this second pin is turned until it has three complete coils. Finally, pin number one is turned a final half turn until it has three coils. At this point the string will have been subjected to a significant tension; enough to hold the coils in place, but not enough for the string to be up to pitch. There should be no reason to make double cuts, that is, gauge once for a "rough cut," then put the string through the agraffe in order to make a finer cut. The only time I double cut is when the plate struts present an obstacle for the string to lie in the bridge pins. When this occurs I make a rough cut, re-route the string under the strut, set it down in the bridge pins, and make the finer cut.

Various cheatings on the rule

I can hear someone hollering from the back of the room, "But if exactly three coils exist under moder-

ate tension, won't you have to go beyond that point when the piano is chipped?" The short answer is yes. But, surprisingly, the coils do not overturn by much in the music wire sections. Still, as has been pointed out, minor adjustments to the above outline in gauging and cutting can be made in order to accomplish an even better job. Bass strings, however, due to their heavier weight and higher tensions, are a special case. If exactly three coils are apparent at moderate tension, there will exist noticeably more than three coils at pitch. Accordingly, then, I make shorter cuts on all bass strings such that, at moderate tension, there exists a little more than two and three quarter turns of wire.

Why not four coils? Why not. What looks bad is four coils on one pin, two on the next, three on the next and everything in between. Some stringers prefer four coils in the treble area since such a plan causes the pin to stand a little less deep in the block. Easier pin rendering follows. But three coils everywhere has been standard for a long time.

Driving pins

Pins are usually driven into the pinblock with a heavy hammer and tuning pin punch (**Photo 4**). Other than taking care to drive the pin directly into the angled hole, the only other thing to watch for is not to drive the pin down too far. If you do the coil will have to be unhitched, the pin turned up a few turns, and the coil rehitched and tightened. That pin, however, will usually have less torque as a result. This shouldn't be a problem in a good quality block.

One way to avoid either leaving pins too high, or driving them too low, is to avoid driving the pins to optimum height on the initial hammering. Instead, aim for what you think is close, or a bit too high, and then reset to final height after the coils are tight and the string has some tension. This doesn't mean that you must drive the two pins in question, tighten coils and pull strings, then pick up the hammer/punch and redrive those same two pins to their final height. That would be a very poor application of "minimum tool handling" goals. If required, the time to reset too-high pins is when you already have the hammer and punch in hand in order to drive a new set of pins. That is, drive the new pins, but before the hammer and punch are set down, reset the last two pins.

Photo 4

Some technicians are now recommending the use of "dead blow" hammers (they don't bounce off the punch). The claim is that dead blows reduce fatigue and noise. I haven't tried one yet.

Tight coils

Coil should be tight against each other. When the pins are turned in the block some method of keeping the coils together is necessary or they will spread out in helix fashion on the pin. One method is shown in **Photo 5** (next page). Notice that as the pin is turned with a ratchet wrench equipped with a "tuning pin socket," a stringing hook is maintaining the coils in tight arrangement. This technique gets you close, but not all the way there. (I don't remember where I acquired the tuning pin socket, but it must have been from a piano supplier since one end of it has a 3/8 inch recess for the wrench, while the other end has a tuning pin star recess.) Notice in the photo that when stringing the highest treble section I hold the hook in my right hand and the wrench in my left. This is so because the treble case prevents normal right-handed use of the wrench.

Final and finished coil integ-

rity is had by working the bottom of the coil as well as the top. The bottom can be worked with a coil setter, the kind that rocks and pushes off the plate, or with an impact coil setter (available from Pacific Piano Supply).

TIP: Rocker type coil setters are notorious for making interesting chips in the plate finish. This can be avoided by attaching a piece of durable cloth, such as high quality key bushing cloth, to the tool at the point of plate contact. Use epoxy or spray adhesive.

Coils can be tightened from the top by gently but firmly tapping the coils with a small hammer and coil cutter "punch," that hardened steel tubular thing, or by using the impact coil setter. Whatever tools and methods used, the finished coil should be more or less parallel with the plate surface, and tightly squeezed together. If using a rocker type coil setter for coil bottoms, you will want to employ it at each couple of pins as you move along in the stringing process since clear access is available. Coil tops, however, should wait until later when a whole section can be done at once.

Pinching Beckets

A neat job also must include pinching that sharp wire bend where the wire enters the pin. My favorite tool for this is the parallel pliers. **Photo 6** shows the tool in action. Throughout most of the scale, pinching beckets should be done after the string is under some tension. But up in the high treble sections I pinch the beckets *before* I apply any tension. Actually, the entire coil is pinched causing it to look oval. Failure to do this often results in rounding off the sharp wire bend when tension is applied; and once that rounding occurs the becket cannot be made sharp again. Moreover, the rounding indicates that part of the short wire end in the pin has pulled out leaving a much shorter length of wire engaging the pin.

Finally, this condition, if not corrected, will always be painfully obvious to anyone with a trained eye. It looks awful.

So, then, does all this mean that a stringing job is bad if the beckets don't perfectly line up? No. Or if a coil here and there isn't perfectly tight? No. For heaven's sake, we'll all go nuts. What matters is that an attempt at fine work is clearly in evidence.

Next month we'll end this discussion on stringing as we consider the capo bar and a host of miscellaneous but relevant techniques. J

Photo 5

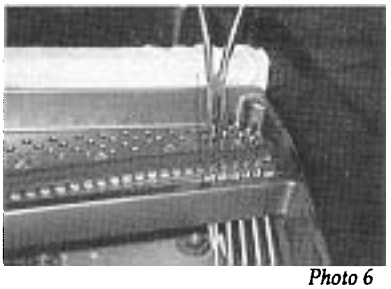
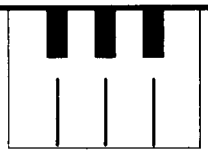


Photo 6



Tech Talk

Don Mannino, RPT
National Service Manager
Young Chang Pianos

Rationalizations:

First in a Series of Articles on *Grand Action Regulation.*

In beginning a series of articles on action regulation, it seems appropriate to step back and look at the concepts of regulating a little before the details are examined. While I intend to make these articles as practical and didactic as possible, please bear with me as I start out with some philosophical observations.

What is regulating? Is it a means or an end? In a piano factory most manufacturers look at regulation as a very strict series of instructions to be followed exactly. If piano factory workers could be computerized, each step of the regulation process would be like a subroutine in a computer program.

```
110  Input "Key Height", N
120  Pick up long tweezers and
     ruler
130  For K = 1 to 88
140  Install paper punchings until
     key (K) is height (N)
150  Next K
```

If each step is carried out *exactly* as instructed, the job is done and you go on to the next job. Is this what regulation is like? Dream on!

Why can't we just follow the steps like the manufacturers try to do? If you look closely at the end product of any piano manufacturer, you will see why. The answer is something we often tell our customers: every piano is an individual. As much as manufacturers try to make every piano exactly the same (and some are much better at this than others), there are always small differences in the way the parts went together that demand adjustments elsewhere in the piano. The differences in the various manufacturers' approach to this problem is a large part of what defines the personalities of the products they produce. Some companies spend huge resources on engineering out the irregularities in their pianos, while companies at the other extreme live with the irregularities and adjust for them later in the manufacturing process. Each philosophy has its benefits (and examples of every hue in this spectrum could be cited), and as a technician servicing these pianos in later years you must be the most flexible of all as you deal with the original manufacturers' work. The technician least of all can expect to make each piano being serviced exactly the same; one must take each different manufacturer's intentions to the finest level of perfection, and each manufacturer's intentions are a little different, to say nothing of the individual differences among different samples from one manufacturer!

How closely should you follow specifications when you regulate? There is no definitive answer to this question (which is why I *always* ask it in my regulating classes)! If the manufacturer spent the money for a vacuum-process plate foundry, there is a good chance the regulation specs can be followed reasonably closely, at least as a starting reference. I am not inferring that this means that a V-pro cast plate makes an inherently superior piano. I am only saying that it makes the piano much easier to build, and requires less in-depth knowledge on the part of the factory workers concerning the correct performance of the piano. For example, I have asked factory workers at three different companies whose jobs were to set the plate height and string bearing, just what the effect of incorrect bearing is. *None* of them knew the answer — they only follow instructions. For this reason, an emphasis on accuracy (like the use of V-pro plates or extensive use of elaborate automatic machinery) tends to result in more consistent pianos with less likeliness of screw-ups, but the lack of true expertise in the factory partially limits the potential of the instruments produced.

When you regulate a piano, you must deal with the variables built in by the manufacturer. I say variables instead of shortcomings because these variables do add to the personality of the instrument, and I do not believe it is the technician's job to eliminate the personality of the piano. Your job is to enhance and perfect each instrument to its highest level. Many of us have had some very rewarding experiences regulating or rebuilding pianos that others might have turned their noses up at, because we made the effort to adapt our knowledge of piano technology to the optimum benefit of the individual piano.

To answer my earlier question, regulating is an end and not a process for achieving that end, because the best possible end result is more important than how we achieved it. A thorough understanding of how the action works is *ex-*

tremely important, because this is the only way we can resolve the variables that are encountered in piano actions and work out a regulating process that will wring the best performance from each action. Because of this, the amount of experience and knowledge needed to be an excellent regulator is very large, and the ability to apply one's experience and knowledge to different actions is of extreme importance.

Am I hinting at elitism here? It is true that there are some people who will not make good regulators, but only because they don't want to expend the effort necessary to become one. We all have three options: (1) we do action work in a mediocre fashion and don't worry about it; (2) we recognize our limitations (or tastes) and refer action work to someone else, or (3) we attend every regulating and action class available, read all of the Journal articles, and try, fail and retry until we know we are beginning to do it right!

In the months to come I will offer a series of articles on grand piano regulating roughly in the sequence of the regulation process. We will start next month with a discussion of the goals of regulating and the needs of the pianist. In later months will come articles on preparation of the action, action geometry, and detailed articles covering each step in the regulation process with the correct timing of reconditioning steps. After the grand regulating series is completed I will apply these concepts to vertical piano regulating — that is, if Jim Harvey is willing to put up with me any longer!

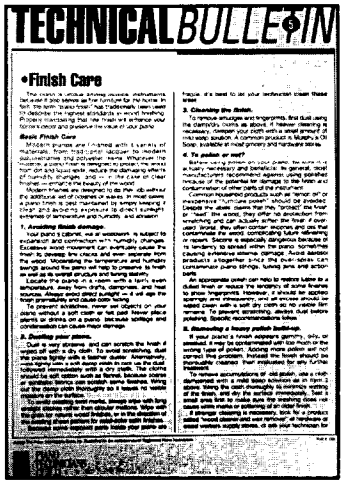
J

Introducing.....

Marketing Ourselves

Bill Spurlock, RPT
Marketing Committee

Technical Bulletin #5—Finish Care


TECHNICAL BULLETIN

•Finish Care

The Marketing Committee is pleased to introduce this latest addition to the Technical Bulletin series. We believe that TB #5 will be uniquely useful to piano owners and technicians alike.

Previous Bulletins are designed to help the technician explain the need for various services to the client, such as pitch raising, regulation, voicing, and climate control systems. However, the primary purpose of TB #5 is simply to answer clients' often-asked questions about the care of their piano's finish. In addition, it attempts to prevent damage from improper cleaning and handling, and from use of harmful products.

Because so many clients ask their technician's advice on care of their piano finish, and because this Bulletin provides that advice without trying to sell anything, it gives the technician a marketing tool that is especially easy and pleasant to use. It is non-threatening to the client, being perceived as a gift rather than a sales pitch. Since a piano is often valued as much for its furniture aspect as for its musical function, helpful advice on finish care builds the technician's image as knowledgeable and concerned about the client's interests.

This article will explain the content of TB#5, and provide additional information useful when offering finish care advice and services to clients. The headings to follow correspond to similar headings used in the Bulletin.

Basic Finish Care

Under this heading and those which follow, TB #5 explains causes of finish damage and how to avoid them. It also aims to dispel common myths about finish care, and presents step-by-step instructions for cleaning and polishing a finish, as well as tips on cleaning keys and other general information.

From reading the labels on furniture polishes one might get the idea that these products are essential to maintaining a piano's finish. Most products imply that they protect the finish, and some even claim to feed the finish or nourish the wood. To evaluate these claims we have to look at what really causes finish damage. Is it lack of polishing? Not really. Is it wood deterioration from lack of nourishment? No. Finishes deteriorate for very basic reasons. Most commonly, these are:

- scratching due to the abrasive affect of dust and/or the wrong type dust cloth.
- scratches, chips, and dents due to carelessness and unpadded objects placed on the piano.
- excessive wood movement caused by humidity and temperature variations, resulting in finish lifting, checking, and cracking.
- deterioration and fading caused by exposure to sunlight.
- damage from water or other liquid spills.

In looking at the list above, it should be clear that furniture polish is of virtually no value in preventing finish deterioration. With or without polish, abrasive dust particles will still accumulate and scratch if not removed correctly. Polishes certainly cannot protect against scratches and dents from hard objects. They cannot prevent or even slow the passage of water vapor through a finish and the wood movement and finish checking which follow. Polishes will not prevent damage from sunlight. The only possible protective effect of a polish might be as a water-repellant film in case of a liquid spill. Even here, the protection would only last for a few minutes; no polish will prevent damage from a wet glass of water left standing for any length of time.

Polishes *can* serve a purpose by enhancing the appearance of a finish and reducing its tendency to show finger prints. However, they do not serve to protect the finish or wood from the types of deterioration listed above.

Thus, the basic message of TB #5 is that the finish itself is designed to protect the wood from dirt and liquid spills, and reduce the damaging effects of humidity changes. Modern

finishes are designed to do this job without the additional aid of polishes or waxes, and in most cases proper maintenance amounts to simply keeping the finish clean and avoiding sunlight, extremes of temperature and humidity, and abrasion.

Avoiding Finish Damage

Under this heading, the client is advised how to minimize climate-caused damage, and that doing so will also benefit the piano's structure and tuning stability. Basic warnings are included about not setting unpadded objects on the piano, and to avoid all drinks, plants etc. that could cause spillage and condensation. (Note: It is important to realize that anything containing water, even a plant with a completely waterproof saucer, can cause moisture damage by attracting condensation.)

Dusting Your Piano

This section explains that dust is abrasive, and can scratch the finish if wiped off with a dry cloth. To avoid scratching, dust should be removed by gentle use of a feather duster or slightly damp cloth.

Most effective is a cloth, just barely dampened so it leaves little or no visible moisture on the surface, followed by a dry cloth. The cloths must be soft cotton such as flannel; coarse or synthetic fabrics can cause scratches. To avoid creating swirl marks, the wiping should be done with long straight strokes rather than circular motions—with the grain for wood finishes or in the direction of the existing sheen pattern for solid-color satin finishes. The damp cloth attracts and holds the dust, removing it from the surface with only the lightest pressure required. A dry cloth can then be safely used for the final wipe.

The client is advised that fragile parts inside their piano should only be cleaned by their technician. On that subject, I would like to share some simple and effective techniques that I use for light dusting during routine service calls. I learned this procedure from Jim Johnson of the Sacramento Valley Chapter. Jim pointed out the customer relations benefits of including cleaning with a tuning visit, saying that the client may not fully appreciate the sound of a good tuning, but they love the sound of a vacuum cleaner and the improved appearance that results. Providing this service shows that you care about your customer.

Jim's procedure is simple: use a paint brush to remove dust from exposed parts and get it airborne, while simultaneously using your vacuum cleaner with crevice tool to suck it up. The brush must be a good quality natural—bristle type, about 3" wide with long bristles. Do not use nylon bristles—they soon bend and tangle into a useless wad.

For a vertical piano, start at the top of the pinblock and work downward, so any dust that resettles is picked up again. The paintbrush quickly removes dust from tuning pins, exposed action parts, and keys. Removing the bottom board gives access to the bridges, trapwork and pedal board.

The paint brush technique is especially useful for grands, where the tuning pin area can be effectively dusted by holding the brush vertically and using firm, jabbing strokes. As the bristles hit the plate, they splay outward across the surface of the plate webbing, reaching under the strings. The dust is lifted into the air, and picked up by the vacuum's crevice tool. This same technique can be used around the hitch pins. Use conventional brush strokes to clean bridge tops, damper heads, etc. Long bristles will extend through the bass strings to reach the tenor bridge top. Follow by dusting the soundboard and wiping the plate with a soft cloth.

The idea is to remove dust from accessible areas without removing the action or parts not normally removed during tuning. This keeps dirt from accumulating in newer pianos, and improves the look of older ones. This job only adds a few minutes to a service call, and enhances your reputation while making the piano more pleasant to service.

Cleaning The Finish

This section gives instructions for removing smudges and finger prints. As with dusting, the first step is to remove abrasive dust particles to prevent scratching. Then, any smudges can be removed using a cloth dampened with a small amount of mild soap solution, such as Murphy's Oil Soap.

To Polish Or Not?

Here the Bulletin cautions against the use of inexpensive polishes and lemon oils. According to one finish expert, many products sold as lemon oil are nothing but deodorized kerosene with lemon scent. These products often contain silicones and oils that contaminate the wood, complicating future furniture refinishing or touch-up. Silicone is especially dangerous because of its tendency to spread within the piano, sometimes with disastrous consequences for the pinblock. Aerosol products are to be avoided because of the risk of over-spray contaminating strings or action parts.

The Bulletin points out that an appropriate polish *can* help to restore the luster to a dulled finish or to reduce the tendency of some finishes to show finger prints. However, it should be applied sparingly and infrequently, and all excess should be wiped clean with a dry cloth so no visible film remains.

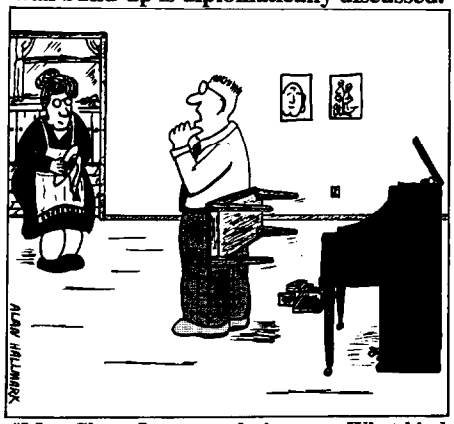
It is amazing to see how some piano owners apply a heavy coat of furniture oil to the finish and do not wipe off the excess. Presumably they must believe that the oil will soak into the finish to preserve it. However, what actually happens is that it sits there, attracting dust and eventually hardening to a dull gummy film. Repeated heavy applications can soften some finishes, decreasing their moisture resistance and making them vulnerable to imprinting. Most of us have probably had the experience of finding a perfect imprint of our backside embossed into the bench top after tuning on a hot humid day—or,

in severe cases, of actually finding our pants stuck to the bench! (See the accompanying cartoon provided by Alan Hallmark.)

Removing A Heavy Polish Build-up

This section gives instructions for restoring the appearance of a finish that has a gummy, oily film from past misuse of polishes. The first recommendation is to use a cloth dampened with a mild soap solution such as Murphy's Oil Soap, followed by immediate drying. A small area should be tested first to make sure the washing does not cause white marks or softening of an older finish. If stronger cleaning is necessary, a professional wood cleaner and wax remover (available from better hardware stores or woodworkers suppliers) can be used. Once the original finish is clean, it can be left as is or polished with an appropriate product to enhance its gloss and clarity.

After forty years, the problem of sticky wax build-up is diplomatically discussed.



"Mrs. Clean, I was wondering . . . . What kind of furniture polish do you use?"

Care of Specific Finish Types

This section discusses the two most common finish materials—lacquer and polyester—and gives instructions for care of each. A couple of common brands of polish are named, so that piano owners have something specific to shop for. However, since there are many good products available, and since many technicians carry polishes to sell to their clients, the Bulletin advises them to ask their technician for a recommendation.

Many polishes produce a slightly wet look to the finish, which creates a glossy appearance. This affect will restore the shine to a scratched or worn surface, and is an appropriate treatment for a semi-gloss or gloss finish. However, such a polish will usually cause a poor appearance if applied to a satin finish. Such finishes usually achieve their dull sheen through fairly coarse scratches left during the rubbing-out process, and a gloss- producing polish will leave the appearance of shiny scratches. Thus simple cleaning is usually the best treatment for a satin finish.

For gloss lacquer finishes, a cream-type polish such as Guardsman or Mohawk's OZ is recommended. This type polish is often endorsed by furniture makers and finish experts, and contains no silicones, oils or waxes.

High-gloss polyester finishes will maintain their appearance well if kept clean. However, high-wear areas such as the music desk may eventually dull due to many fine scratches. These areas can be buffed back to a high gloss using products designed to remove tiny scratches from fiberglass boats and plastic windshields on motorcycles, etc. Two such products are Meguiar's Mirror Glaze #17 Plastic Cleaner, and Meguiar's Mirror Glaze #9 Swirl Remover. These are available at auto parts and automotive paint supply stores. Check with advertisers listed in PTG publications, and visit the exhibits at the next PTG convention for finish care products you can carry for your clients.

Finish Repairs

Under this heading, the client is advised that dents, scratches and chips can be corrected by a specialist in finish touch-up, and that some technicians offer this service or can refer to someone who does.

I feel that touch-up is a valuable skill to add to one's business, if only to save your hide when you drop that tuning hammer onto a customer's fallboard! This skill is especially valuable if you do much work for piano dealers or own a rental piano business. A good way to get started is to take a week-end course from suppliers of touch-up products such as Mohawk and Star. You can then practice on your own furniture at home, then on used pianos at a local dealer.

Cleaning Your Keys

Here the Bulletin advises using a soft damp cloth, thoroughly wrung out, possibly with a mild soap solution. No solvents should be used, and the keys (especially ivory) should be dried immediately. The keys should be wiped back-to-front, rather than side-to-side, so moisture and dirt will not seep down the sides of the keys.

Conclusion

As this Bulletin was nearing its final form, I happened to have about two dozen new pianos to service for new clients. To field test the bulletin, I made a mock-up and handed it out during my visits. I found that most of these clients asked me about finish care even before I brought the subject up, and all responded to the Bulletin with appreciation and interest.

When the actual finished Bulletin came out, I showed it to a local dealer. He was very enthusiastic, since customers question him constantly about finish care. I have now supplied him with the new Bulletins, labelled with my name and address, for a counter-top display. He is thinking of adding a line of finish care products to that display as well. These experiences confirmed my belief that this will be one of our most popular products to date. We hope you agree.

I would like to thank those at Baldwin, Steinway, Yamaha, and Kimball for their assistance in this project, as well as Dwight Pile of Bronte Inc. and Bob and Marcia Davis of Davis Piano Workshop for their helpful suggestions.

International Overview

Yat-Lam Hong
Western Michigan Chapter

Chinese Pianos:

Over

60

MANUFACTURERS

OR JUST THE

BIG 4?

Presently, there are over sixty piano manufacturers in China. Four of them are real factories that engage in mass production. I'd call the rest piano assemblers, which assemble pianos from parts purchased from the Big Four. Some of these assemblers are so small that they can only be called workshops, such as the one in Xian, which, with a staff of three technicians, produced only six pianos in 1988. (This workshop is part of the Xian Conservatory in Shaanxi Province. All its products are for use within the Conservatory, and the technicians never even bothered to put a name on the fallboards.)

The Big Four are located in Guangzhou, which manufactures the Pearl River and Brentwood; Shanghai, which makes the Nee-Er and Strauss; Beijing, which makes the Xinghai, Otto Stein, and others; andYinkou, which makes the Nordiska brand. Each of these factories produces several brands of pianos, usually one or two brands with Chinese names for domestic consumption, and English- or German-sounding names for export (for the convenience of foreigners). Within each manufacturer, there's no difference in the pianos between the brands, except in name. Anyone who wants his name on these pianos and orders enough of them can have his own private brand without trouble.

Of these four, The Guangzhou Piano Company in the southern province of Guangdong, is by far the largest — several times larger than any of the other three. It also has a branch factory in Macau, a small island within swimming distance of mainland China. This is the factory that produces Hastings pianos (with parts and technicians imported from Guangzhou). These pianos are identical to the Pearl River produced by the main factory. I was told by company officials that having the same piano assembled in Macau, a Portuguese colony, gives the company certain benefits in export.

The Orient Tours sponsored by the Piano Technicians Guild in the last few years visited four of these five factories: Guangzhou in 1989 and Shanghai, Beijing, and Macau in 1991. The factory in Yinkou is the one the tours have not covered yet, as it's in the extreme northeast part of the country, far from any major sites of interest to tourists. Located in Liaoning Province, Yingkou is only 100 miles from the North Korean border. Let's hope the next PTG Orient Tour will include this remote factory on its itinerary.

Americans familiar with Chinese pianos have probably heard of the Pearl River, Brentwood, and Hastings brands, and perhaps few others. This is not surprising, as these brands are all products of the Guangzhou Piano Company, the largest piano manufacturer in China (and for now, the most technologically advanced), which has exported more pianos than any other Chinese manufacturer.

The main (old) factory of the Guangzhou Piano Company is located in the bustling city of Guangzhou, which is formerly known as "Canton." As the company ran out of space, and the neighboring land was all taken up by other businesses, it built a seven-story factory out in the country. The new factory does most of the interior work: pinblock back assembly, stringing, keyboard- and action-fitting, etc. The old factory contains the show room, conference rooms, administrative offices, and does mainly case finishing, final regulation, voicing, climatization, and shipping.

Having pianos produced at two factories creates logistical problems, as trucks are constantly busy transporting unfinished pianos and supervisors back and forth, fighting the continuous bumper-to-bumper traffic. As long as the company is not willing to abandon its downtown location as a factory, this problem will continue indefinitely. When we visited the huge new factory in 1989, it was already running out of space, and the company was bulldozing the farm land nearby to build an addition to that, which may be completed by now. The company was also beginning to make grands for the first time, and a

5'6" prototype was in the works. This is perhaps a microcosm of the booming economy of Guangdong, the most prosperous of all provinces in China.

The climatization process may need some explanation. It's done in a large, glassed-in room where the climate can be precisely controlled. (The company has climate data for all countries it does business with.) This is the only air-conditioned room in the entire factory — a blessing for those who work there, as Guangzhou is in a very hot and humid part of the country. All pianos for export are kept in this room for several days while the temperature and humidity are set to those of their country of destination. While here, the pianos get their final regulation, tuning, and inspection. Before leaving this room, each piano is completely sealed in air-tight plastic. For example, the Brentwood pianos meant for the U.S. market are climatized to the average U.S. temperature and humidity at the time of arrival. This process is to ensure that by the time the pianos are unsealed at their destination, they're already climatized, which should minimize the changes in tuning, voicing, and regulation.

The Beijing Piano company is a cluster of buildings. It makes the Xinghai piano (named after a famous Chinese musician) for domestic use and Otto Stein and a few others for export. In one building, we saw modern keyboard-making equipment. Another new building, just completed in 1991 when we were there, was still empty except for a huge German-made sanding machine. This building is to be the main part of the new factory with the most up-to-date technology. The rest of the mostly German machinery, we were told, would be on its way soon. As the new factory goes into operation, the old buildings would be either remodeled or torn down, but our guide didn't want to show them to us. From what I could see as we walked past them, they looked rather primitive.

At the main office, we were very surprised to see a foreigner working there: Lothar Schell, the other well-known German piano scale designer. I found out that he's working for the Beijing Piano Company under a four-year contract, starting in 1989, on a three-months-on/three-months-off schedule, and the company pays him extremely well — even by American standards. His job is to upgrade the present piano scales, equip that new factory with the best machinery, and teach the people how to run it. To overcome the language barrier, the company had hired a Chinese interpreter fluent in German, so Lothar could communicate with the company officials and workers through her. When we saw him, he'd been in Beijing almost two years. He appeared very comfortable with the Chinese way of life, including the use of chopsticks.

Beijing is the seventh piano company Lothar has worked for in the Orient; the other six are in Korea and Japan. He emphasized that he only worked for one company at a time; otherwise, it would be a conflict of interest on his part. I asked him what he thought of Chinese pianos, and he told me something quite amazing. "Let's say a piano has a perfect design to begin with," he said, "and something is always lost in the process from design to production. The Japanese will turn out a finished piano that resembles 90% of that perfect design; the Koreans, 70%; and the Chinese, 30%. The trouble with Chinese is that they simply won't follow instructions." This penetrating observation can only come from someone with years of familiarity with these cultures.

The problem of not following instructions has nothing to do with the desire to sabotage a company. Rather, it's the workers who, after learning to do a job a certain way as taught, discover the "shortcuts," which are faster and easier, and in their judgment, just as good as, if not better than, the ways they are taught. There's an unspoken attitude that says slight deviations from specifications really

"won't matter." Let me give you some examples I saw in several Chinese factories.

In almost all the factories, I watched the workers level and ease keys. Every one of them would remove a key by lifting it at the front until the hole clears the balance-rail pin, rather than lifting both the front and back together, which would require both hands. The one-handed operation tends to elongate the balance-rail hole, and cause the key to "pulley." Some jobs should not be done single-handedly.

I also watched a worker regulate the hammers to the rest-rail. If the hammers were off the rail, he'd remove the keys (using the one-hand method), and pound the capstan screws down with his hammer. If they were still too high, he'd have to do some fine regulation. The method? The same, only he didn't pound so hard this time. He had a capstan wrench nearby, but it's used only to raise the capstans if he'd pounded them down too far. If there's an easy way to pound the capstans up, I'm sure he'd do that rather than use the capstan regulator, which is much slower. Techniques like this violate a basic rule of workmanship: "Pound a nail; turn a screw." Pounding strips the screw hole, but he doesn't care about that. When the piano has aged some in a customers' home, the capstans may suddenly "bottom out" on a pianist's hard blow, creating tremendous lost motion in the keys.

I can't believe this is how the workers were taught, but this is how they do it. It's apparent that they are oblivious to the fact that craftsmanship means paying attention to details. Another major contributing factor is the Communist system of remuneration. Equality is such a basic tenet there it wipes out an individual's desire to excel. If one does superior work, he doesn't get any more pay than anyone else doing the same job. On the other hand, if one goofs off a lot, he doesn't get any less either, as long as he meets his assigned quota. Here, the shortcuts would really come in handy. I hope the economic reforms I hear about will eventually change that.

I suspect the highly automated factory Lothar Schell is building for Beijing is as much for speeding up production as for reducing human errors, accidental or otherwise. Looking at the situation in the long, run, redesigning the pianos and building the factory may be the easy part; altering the mentality of the workers will be the greatest challenge.

The Shanghai Piano Company is located in an older part of Shanghai. It's also known as the Nie-Er Piano Company, named after Nie-Er, another famous Chinese musician. On our 1991 tour, we spent a whole afternoon there. It's a small outfit, and the pianos on the production line that we saw bore either the Nie-Er or, for export, the Strauss name. The company also has been making grand pianos for a number of years — several sizes ranging from baby grand to nine-foot concert grand. If the ones we saw were typical, the Nie-Er grands are a long way from being ready for the export market.

Our hosts in Shanghai were most gracious. After the tour, they invited us to the conference room for tea and fruit, and asked us for our comments and advice. Being fluent in English and Chinese, I was elected the translator for the session. The Nie-Er administrators, especially the head engineer, seemed particularly interested in knowing the tuning pin torque of good American pianos. As we measure this in inch/pounds, and couldn't convert it to its metric equivalent, which they'd understand, we went round and round the discussion and got nowhere. But I did get the impression that underlying all their questions is the belief that, if tuning pins are tight enough not to slip, the piano should stay in perfect tune indefinitely. It may be a simplistic view of the tuning stability problem, but we were there as guests, not advisors. I recall having to mumble a lot of polite nothings to show our good will. After all, we didn't go there to criticize their pianos, workmanship, or modus operandi.

Looking back, I realized that this is the only Chinese piano manufacturer among the Big Four that doesn't have the benefit of Western technological support. Guangzhou has two American advisors working with it; Beijing has a German scale designer in its employ; and Yinkou has Swedish technology after it bought out the now-defunct Nordiska Piano Company in Sweden in 1990. Obviously, Nie-Er simply can't afford such help, but I sensed an eagerness for up-to-date information. The Nie-Er people know there's room for improvement in their pianos, but they don't know how to go about achieving it, and are trying to figure things out the best they can in isolation. I feel rather sorry for the company.

Being a native of Shanghai myself, I talked to them in the Shanghai dialect, and got to know Nie-Er's head technician quite well. He's a friendly gentleman in his fifties, and has worked for Nie-Er for many years. I thought one way to improve the quality of the Nie-Er pianos would be to have a better-trained head technician, who can then teach what he knows to the rest of the factory. So I invited him to attend our PTG convention in Philadelphia last year, and offered to translate everything for him. He said he'd try to get the government to come up with the money to send him there. He didn't show up, which meant the government turned him down. For him to attend that convention with his own money would mean spending nine years' salary, which is simply out of the question.

In our conversation, we talked about tools. He said Chinese tools are of such poor quality that they're all junk. I was startled by his frankness. It must have to do with the fact that we could speak the same language, which tends to build trust. Later, I sent him a Hale extension tuning hammer and a pair of Vise-Grips. The gifts overwhelmed him.

Hastings Piano Company is in Macau, a tiny island 450 miles southwest of Hong Kong. Macau is still a Portuguese colony, and has the

reputation of a "sin city." It's been called the "Las Vegas of the Orient." Casino gambling, dog-meat restaurant, and a few other activities illegal in Hong Kong are openly available here. It attracts a lot of people from Hong Kong who come to spend weekends.

Hastings Piano Company has the best view of all piano manufacturers, as it's located on the eleventh floor of a high-rise building. Where land is a scarce and population is great, cities tend to grow vertically, and high-rise buildings for residential and business use are commonplace. Just think of all the skyscrapers in New York City, or Chicago, for example. As a branch of the Guangzhou Piano Company, Hastings imports all its parts from Guangzhou, and its pianos are the same as Pearl River or Brentwood, though assembled in Macau. Most of the employees are also imported from Guangzhou, who live in Macau in separate dorm-like apartments for men and women. Hastings' manager told me it's necessary to bring seasoned workers from the main factory in Guangzhou, because the fine craft of piano-making requires experience.

The Hastings factory is a very crowded place, as there are no driveways or sidewalks to expand to. Pianos, crates, and parts are all jammed together with narrow walkways in between. In one area, we saw about a hundred piano plates stacked against the wall. I asked the manager if there's any danger of the floor collapsing from all that weight. He said it's perfectly safe, as this high-rise was built for industrial use, and is not a converted apartment building. However, he said the company will be expanding soon by taking over part of the twelfth floor. The building is equipped with two very slow elevators: one for people, and the other for freight.

As you can imagine, it didn't take us long to tour this factory. At one point, I saw a woman tuning in the area just outside the office. Seeing no pitch reference nearby, I asked here in Cantonese, the local dialect, whether I could see her tuning fork. "The guy in the next room has it," she said. So, it appeared that the entire factory has only one tuning fork that's passed around. "Then, how do you know where A is?" I asked. "Oh," she said, "I just tune the pianos to where I think it is." I hope she has perfect pitch.

One of the rooms on the same floor is used as a spray booth for the polyester finish that goes on all pianos. I peeked in, and the fumes were so powerful they practically knocked me over. The fans were not running. I'm not sure whether they didn't work, or whether they were turned off to avoid blowing dust on the wet polyester-coated pieces and ruining the shine. Anyway, in those concentrated fumes was a guy spraying away at the case parts. He wasn't even wearing a face mask. Without ventilation, it's a terrible place to work, and if he has to quit because of work-induced lung cancer or other respiratory illnesses, the next guy would be glad to have his job — knowing the same thing would happen to him, too. In the meantime, at least he and his family get to eat. When people are poor, life is cheap. It bothers me to see this, but it goes on everywhere.

The first time I saw Chinese pianos was in 1982 at a music store in Hong Kong. They all had the most telling characteristic of a cheap piano: a lack of resonance, especially in the tenor area, which sounded hollow or "honky." I thought it was a waste of natural resources to cut down trees to make instruments like these. The overall quality was so poor that I'd rate them the second worst pianos in the world — after the ones made in South Africa. But cheap they were: Each piano retailed for only US$750.00, which included delivery, tuning, and a matching bench, before bargaining. Even at that, the dealer

was making a profit, or he wouldn't be selling them.

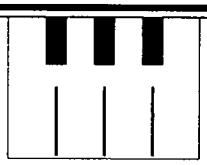
The price was hard to beat, and it still is, although everything has gone up since. The low price is the direct result of low wages. A worker in a German piano factory makes more money in two hours than his Chinese counterpart earns in a month, and the Chinese works six days a week, with only three one-day holidays a year. But in China, the low wages are sufficient for a modest livelihood — assuming one spends carefully, and uses the government-issued shopping coupons, which are available only to the native residents, not tourists. When everyone is poor, poverty becomes normal, and nobody thinks anything of it.

That was ten years ago. I have since seen many more Chinese pianos, both in China and at the National Association of Music Merchants (NAMM) shows in this country. Their quality has improved tremendously in the interim. At the Atlanta NAMM a few years ago, the head engineer of Guangzhou was very proud to show me the latest refinements in its Pearl River pianos. The American advisors working there must be doing something right. The tough part is that, while Chinese pianos are improving, so are pianos made in other countries. Against the rising standards of workmanship, Chinese pianos still have a way to go yet to catch up with the best. Although no longer selling for $750.00, their price is still hard to beat, and this has to be the reason piano dealers are interested in them for their "price-sensitive" market. Translation: Cheap pianos are necessary for poor buyers.

I've heard my colleagues condemn the quality of Chinese pianos with comments such as: "A bad piano is better off not being made to begin with." Obviously, they haven't seen what those pianos were like only a few years ago. The implication is that if such pianos were not available, customers would be buying Brand B, Brand S, or Brand Y pianos, and we'd all have better instruments to work with. Such an attitude strikes me as incredibly naive: they forget that for many people, the alternative to an inexpensive piano is not a better piano, but no piano at all.

But if one indulges in wasteful thinking, one might even think of these pianos as "disposable" items. I'm reminded of the response I got from a colleague, who was the staff piano technician at a very large university, when I asked him how often he regulated the vertical pianos in his school. "Never," he said. "When our vertical pianos need regulation, that's when we trade them in for new ones."

J



Industry News

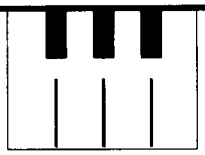
Baldwin Piano & Organ Agrees To Acquisition— Outstanding Capital Stock Brings $18.25 Per Share In Cash

CINCINNATI, OHIO—January 28, 1993, Baldwin Piano & Organ Company and Peridot Associates, Inc. have agreed in principle to the acquisition by an investor group led by Peridot of all of Baldwin's outstanding capital stock, at a price of $18.25 per share in cash. The proposed transaction is subject to certain contingencies including the execution of a definitive purchase agreement, completion of due diligence, approval by the boards of directors and/or acquiror to obtain the financing necessary for consummation.

William Frank, the President of Peridot, stated "We are pleased and excited with this opportunity to work with a prestigious company like Baldwin. Our excitement stems from the Baldwin name, its management and employee group, and the excellent dealer network, all of which we intend to preserve and build upon."

It is anticipated that a definitive agreement will be signed on or before February 28, 1993, and that the transaction should be completed on or before June 1, 1993. Certain expenses of Peridot and, in certain events, additional amounts will be payable by the Company in the event the transaction does not proceed.

Baldwin Piano & Organ Company is the largest domestic manufacturer of keyboard musical instruments and also manufactures clocks, printed circuit boards and wooden cabinets. Peridot Associates, Inc. is a West Palm Beach, Florida based investment firm.



Review

A Temperamental Journey
with
Professor Owen Jorgensen, RPT

An audio-cassette recording of a symposium tracing the history of keyboard tuning,
produced by the
Washington DC Chapter, Piano Technicians Guild
$25

Karen Hudson-Brown
Charlotte Chapter

Professor Owen Jorgensen, who has been described in these pages as "one of PTG's finest natural resources," has given us yet another superb resource to augment our understanding of what our predecessors actually did when they tuned. The members of the Washington, DC, Chapter should be congratulated for their foresight in arranging for a quality recording of the symposium, and their painstaking labor in producing a remarkably well edited three-hour version of an extraordinary day-long event.

The symposium took place in October 1990 in the Hall of Musical Instruments of the Smithsonian's Museum of American History. It was organized by the DC Chapter to bring together PTG's eminent historical tuning authority, Professor Owen Jorgensen, and the Smithsonian's extensive historical keyboard collection. The audience was primarily piano technicians.

Professor Jorgensen states his thesis clearly at the outset:

> "Composers instinctively utilized the sounds of the temperaments in practice at the time and location, so if we can rediscover those sounds and revive them, it is a great improvement for the music. (If) you take the specific eccentricities of a temperament away, like we've done in equal temperament, it's like removing the color from a painting. The form is still there, but the color is gone. It is our purpose, for the sake of the classics, to revive this material if we can."

We are then led on an extensive "Temperamental Journey" through musical history, examining in detail the sounds and philosophies of keyboard tunings spanning four centuries. The instruments used included a 17th-century split-keyed Italian virginal, harpsichords from the 17th and 18th centuries, a late 18th-century Viennese fortepiano, and three pianos spanning the 19th century, including Paderewski's touring Steinway D of 1892. The tunings ranged from Pythagorean, several meantone and well temperaments, to the equal temperament of the 20th century. (PTG's David Lamoreaux assisted with the preparation.)

Although there was a continuing evolution of temperament (that of tempering only a few notes in the beginning, then more and more notes with fewer and fewer just intervals until we reached the equal temperament of today), Jorgensen maintains it was not an evolution for improvement. For every gain, there has been a corresponding loss. No temperament is superior to any other, so there is good reason to revive these tunings for the sake of the classics. He does not suggest "putting away equal temperament for the total common practice today," but he does believe that, "these other temperaments should be revived for everything written before the 20th century."

The mistaken notion that Bach's Well-Tempered Clavier was written for equal temperament does not appear until the 19th century (Grove's, 1893), and music books and encyclopedias have been copying it ever since, Jorgensen maintains. Further "We did not have equal temperament in practice to a common degree until at least 1917," the year W. B. White published the essential instructions.

Jorgensen believes that even though tuners of the past lacked our knowledge of coinciding harmonics, and did not know where to listen for the resulting beat speeds, they had a clear sense of the color of the various-keys (tonalities), and succeeded in artfully creating their versions (plural!) of equal temperament, articulated by W. Staunton in 1889 as meaning, "rendering all the keys available for use." Staunton further declares, "Sometimes the key which bears the greatest stress of imperfection is that which attracts us by its beauty."

Our purpose now is not to rewrite history, Jorgensen states, but to interpret it in a modern way. Our terminology needs to be brought up to date in this century, as it has been in previous centuries. He demonstrates how the definition of "meantone" has changed through history, how the term "well temperament" began to be used in the mid-20th century to describe the 18th century's "new tuning," and how "Victorian Well Temperament" is now used to describe what 19th-century tuners were actually

doing when they thought they were tuning equal temperament.

There are some light moments. Jorgensen quotes from an article in The Tuner's Magazine, 1914: "An absolute correct temperament can be made by any good tuner who does not stop to try to count the vibrations or beats between the two notes he is working on." Jorgensen retorts, "How do you like that? You don't stop to count the vibrations. No, sir!" He quotes further, "As to the 3rds and 6ths, why fool with them? As there are only the 12 notes to tune, and if they are properly tuned, the 3rds and 6ths must be correct." [audible chuckles from the audience of tuners] Jorgensen then plays some chromatic 5ths and 4ths on the Erard tuned in a Victorian temperament. They all sound smooth enough. Then he plays some 3rds, 6ths, and then 10ths [more, louder chuckles]

There was also this. "The first beat frequencies for equal temperament were published in 1810. It's ironic that when they were published...it was done by a mathematician, and the whole article was presented in the Philosophical Magazine as a joke. It said, 'Here's this notion of equal temperament, and here's the beat speeds that you actually get in equal temperament, and if you think that musicians are going to accept that major 3rd C-E going that fast...it's just absolutely impossible '... and so they signed the article, "Musicus Ignoramus.'"

The real proof of the truth is heard in the music. The tape begins with a Toccata by M. Rossi (erroneously attributed to Frescobaldi in the narrator's introductory voice-over remarks), played on the 1892 Steinway D tuned in equal temperament. The tape ends by comparing that sound with the same piece performed on a harpsichord tuned in meantone with its variety of sizes of minor and major thirds. One cannot avoid the realization that an abundance of richness has been lost through nearly a century of misinterpretation.

Other musical highlights of the journey on tape are performances by Peabody Conservatory students of excerpts from Beethoven's Sonata, op.53 ("Waldstein"), on an 1853 straight-strung (the bass clarity is striking) Erard with a Victorian Well Temperament, Chopin's Sonata in B-flat minor, op.35 ("Funeral March"), performed first on the Erard, then the Steinway, and finally on the 18th-century Dulcken fortepiano with a modified meantone. (Small minor thirds are very minor. One begins to understand why b-flat minor is "preparation for suicide.")

Having attended the symposium two years ago, when I listened to the tape and compared it to my memories, I realized I had a visual image of the room and the various instruments, which was helpful. I remembered which instruments were being played and could picture the learned professor as he raced from keyboard to keyboard clutching pages from his voluminous manuscript. With only the tape, there may be some confusion in that the instruments aren't always identified, but it really doesn't matter. The sounds are still there, and for the most part, clearly heard.

Though the symposium was attended primarily by piano technicians, the recording of this unique historic event will be of interest to a wide variety of music enthusiasts eager to know more about the sounds of the past and how those sounds can be utilized in their performances today.

It is my conviction that as musicians become familiar with the "new" beauty inherent in the "old" tuning systems, and technicians expand their skills to include a variety of temperament options, the vibrant colors of the past will be restored to today's performances of the classics.

For my part, I am now presenting my piano tuning clients with the choice of a meantone, three varieties of well temperament ranging from an extremely contrasting style which has a pure C-E third to a subtle late 19th-century Victorian version (probably the best compromise overall), as well as modern equal temperament. The response has been overwhelmingly positive. The sounds do sell themselves.

If you have read this far, perhaps you have an interest in this subject, and I would urge you to take the next step. The resources are now available. Get the tape and Jorgensen's new book, Tuning, and take yourself and your clients on a fascinating "Temperamental Journey."

DISPLAY AD INDEX

1993 EVENTS CALENDAR

MARCH

12-14 **South Central Regional Seminar**
Fort Smith, Arkansas • Contact Bill Yick
Rt. 3, Box C644, Charleston, AR 72933, 501-965-7945

13 **Bluegrass Tuning Seminar**
Lexington, Kentucky • Contact Ron Sharp
336 B Radcliffe, Lexington, KY 40505

18-20 **Pacific Northwest Conference**
Seaside, Oregon • Contact Randy Potter
61592 Orion Drive, Bend, OR 97702, 503-382-5411

18-21 **Pennsylvania State Convention**
Holiday Inn-Bucks County, Trevose, Pennsylvania
Contact Patricia Sierota
102 Bridle Path Lane, Feasterville, PA 19053, 215-364-2564

APRIL

15-17 **Mid-South Spring Seminar**
Memphis, Tennessee • Contact William R. Carmichael
901-372-1095

23-25 **Florida State Seminar**
Howard Johnson's-Daytona Beach, Florida
Contact Walter Pearson
1128 State Ave., Holly Hill, FL 31227

24 **Los Angeles Chapter Seminar**
La Canada Presbyterian, La Canada, CA
Contact Jim Karukas
3925 Big Oak Dr. #8, Studio City, CA 91604, 818-506-3077

April-May

30-2 **Central West Regional Seminar**
Collins Plaza Hotel, Cedar Rapids, Iowa
Contact David C. Brown
1719 Bever Ave., SE, Cedar Rapids, IA 52403, 319-365-3742

30-2 **New England/Eastern Canada Seminar**
Merrimack, New Hampshire • Contact Bill Ballard
R.R. 3, Box 875, Putney, VT 05346

May

8 **St. Louis One Day Seminar**
Contact: Bill Trefts, 1453 Colebrook, Webster Groves, MO
63119, 314-962-2143

28-30 **Seminario Internacional**
University of Veracruz, Xalapa, Mexico
Contact Danny Boone
9707 Timberview, Waco, TX 76712

AUXILIARY EXCHANGE

Dedicated To Auxiliary News and Interests

Hello and happy spring to all and it can't come too soon for me. This winter has been extremely damp and chilly and too wet for me. Usually Kentucky is sunny during the winter but this year we have had more rain than usual. All the more reason to have a cause and forget the weather, right?

Our cause again for this month is membership. We really need one thousand members to do all the things that I would like to see this organization do. Has your tuner/spouse sponsored another person into our Auxiliary? You can play a big part in asking your tuner/spouse to do that. Ask a mother, brother, sister, father and last but not least, a friend.

My husband talked before the Dayton, Ohio, chapter of PTG on January 4th, 1993, so I went along for the ride. I had a chance to visit with the members of the Dayton auxiliary. We spent a few hours chatting about how to get new members and what projects to do when the chapters get together. If any of you have some great ideas please share them with us. That would make a good article for the newsletter. I'm sure Jan wants to hear from many people to make the letter as interesting as last time.

I hope you have entered convention times and dates into your new 1993 calendar. It will be here before you know it. Milwaukee has wonderful food and exciting places to see so, please plan to attend with the whole family.

This letter is a little shorter than usual because my computer crashed over the Christmas holiday and I am lost without it. A new one won't get here for another two weeks and so I have to hand-write all my correspondence. My third grade teacher would not like to read my handwriting anymore.

Remember, sponsor, sponsor, sponsor!!

Phyllis K. Tremper
President, PTGA

From The Auxiliary Editor

TOP O' THE MORNING TO YOU!!!

Happy spring! It has been so unseasonably warm and dry in the Pacific Northwest that already in late January the prognosticators are talking about water shortages and brown lawns for the summer. So much for all the jokes about we Washingtonians "rusting"!

MAKING OUR LISTS AND CHECKING THEM TWICE!!

There are two lists of important people included in this issue of the Exchange. The first is a listing of our Sunshine Committee people. Please contact the person for your region if you have news about your family or would like to pass along information about someone else in our PTG "family". Sunshine people are there for the good news as well as the bad news.

Marge Moonan is the Chairman of the Sunshine Committee. Marge has been a member of the PTGA Executive Board for a number of years and has been an active supporter of the PTGA. She is currently going through a period where her family could use a little sunshine. For those of you who don't know, her husband Bill has been ill and is now in a wheelchair. If you get the chance, pass along a cheery thought to her...

Other members of the Sunshine Committee are:

Dorothea Odenheimer
West and Northwest Regions.
Nancy Strauss
Central East Region
Jewell Sprinkle
Southeast Region
Judy White
Central West Region
Marge Moonan
Northeast Region

There is another list of important people included in this issue. Our PTGA nominating committee has gotten together and done its job for the 1993 convention. The committee of Patricia Coleman, Chair, Eileen Guthrie and Deanna Zeringue has come up with the following slate of officers to be voted on in Milwaukee:

President:
Phyllis Tremper
Vice President
Paul Cook
Recording Secretary:
Pearl Kreitz
Corresponding Secretary:
Judy Rose White
Treasurer:
Sue Speir

WAGONS HO!

As you plan your summer vacation around the trip to Milwaukee, you may want to incorporate a little historical side trip into your plans. This year celebrates the 150th birthday of the opening of the Oregon Trail. Between 1843 and 1869, somewhere between 250,000 and 500,000 emigrants set out from Independence, Missouri, bound for the Oregon Territory.

In 1846 the United States and England avoided war by setting up the 49th parallel as the boundary between Canada and the States. That was followed two years later by the establishing of the Oregon Territory which came to represent the end of the rainbow to midwest and eastern farm families who were suffering through terrible economic depression when the bottom fell out of the grain prices in 1842.

By 1860 the vast migration had slowed to a trickle that continued until the turn of the century. As a matter of fact, the wagon ruts are still visible as a silent memorial to all of those hardy souls who braved the elements to open up the west.

For more information on events and activities as well as self-guided tour routes through the six modern states the trail crosses, contact the Oregon Trail Coordinating Council at 222 NW Davis, Suite 309, Portland, OR 97209, 503-228-7245.

We Need You!

Articles or Essays:
On travel, families, work, hobbies—
funny • fact • fiction

Letters:
About people and places, events, seminars, conventions, opinions, concerns, interests, point/counterpoint—

Trivia:
On pianos, technicians, musicians—
historical • contemporary

Cartoons:
Jokes & cartoons—

In Other Words...

Please remember, you don't have to be a professional writer to submit something for the Auxiliary Exchange.

We would love to have your input, to hear about the funny events and day-to-day things that make you laugh.

Sharing your experiences may benefit others and will keep us communicating with one another.

All Those Interested Should Apply!

Contact:

Jennifer Reiter
A/E Editor

MEMBERSHIP

JAN • 1992

NEW MEMBER

REGION 1

041 MAINE

LAURENCE KENT
P. O. BOX 1451
BOG ROAD
ROCKLAND, ME
04841

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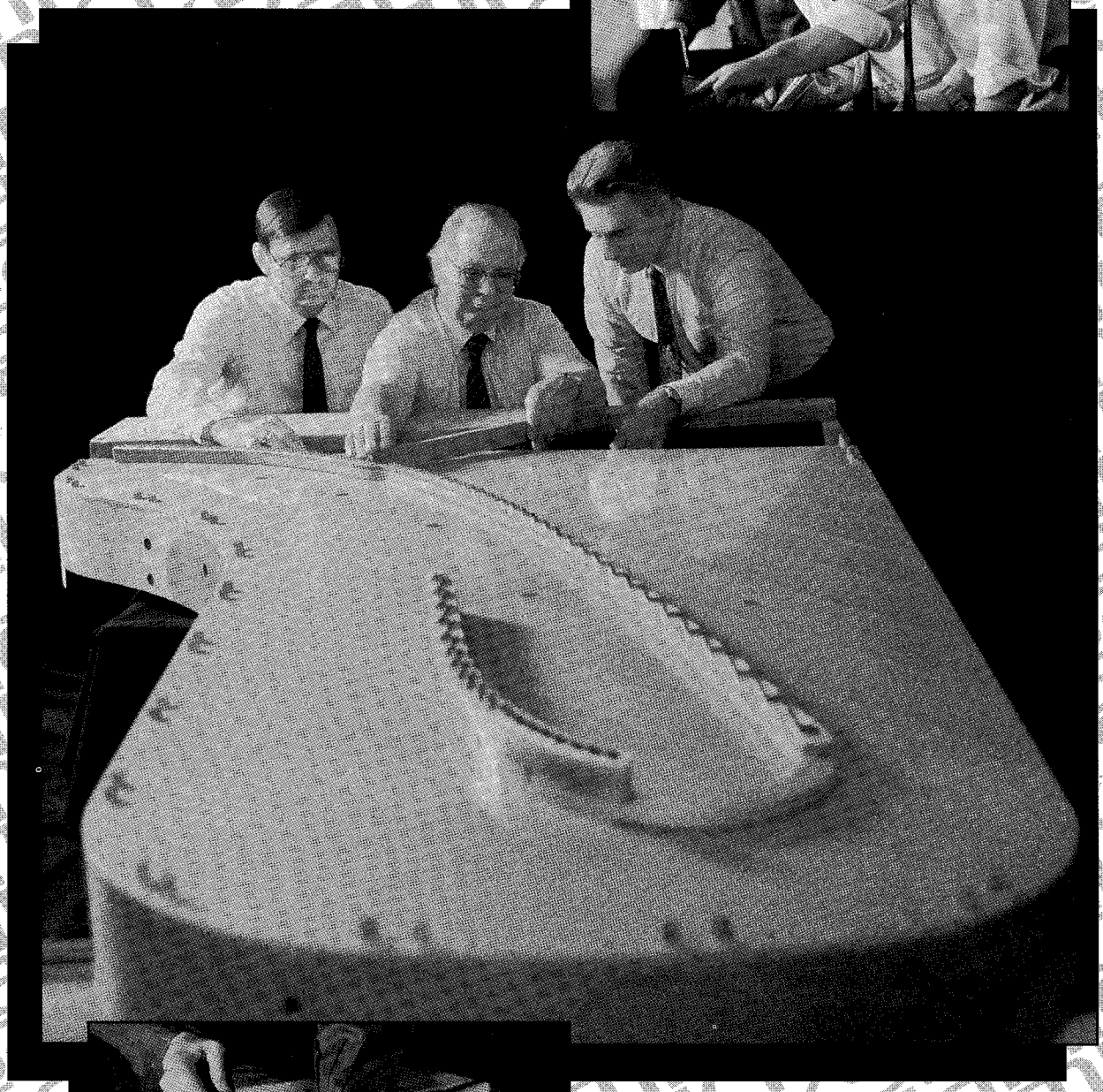

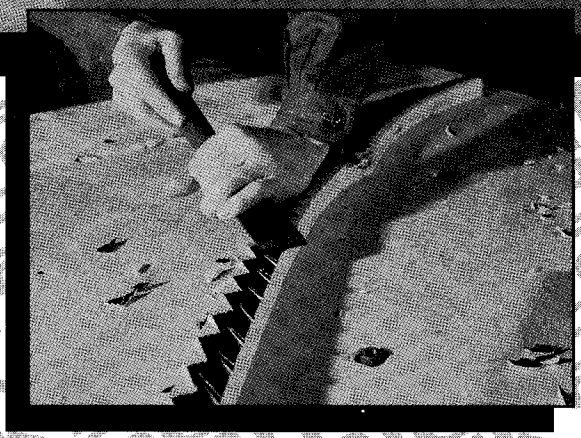

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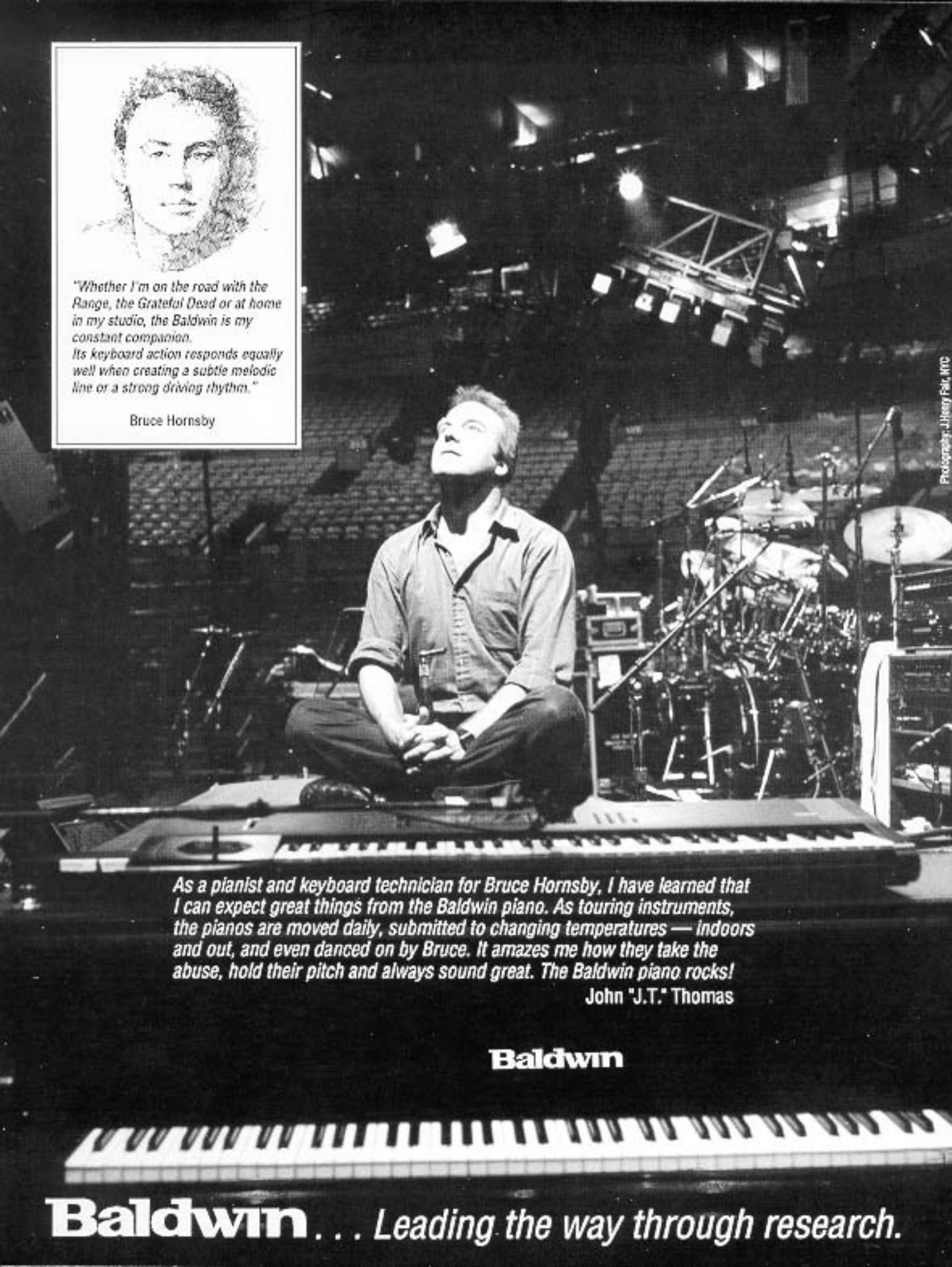

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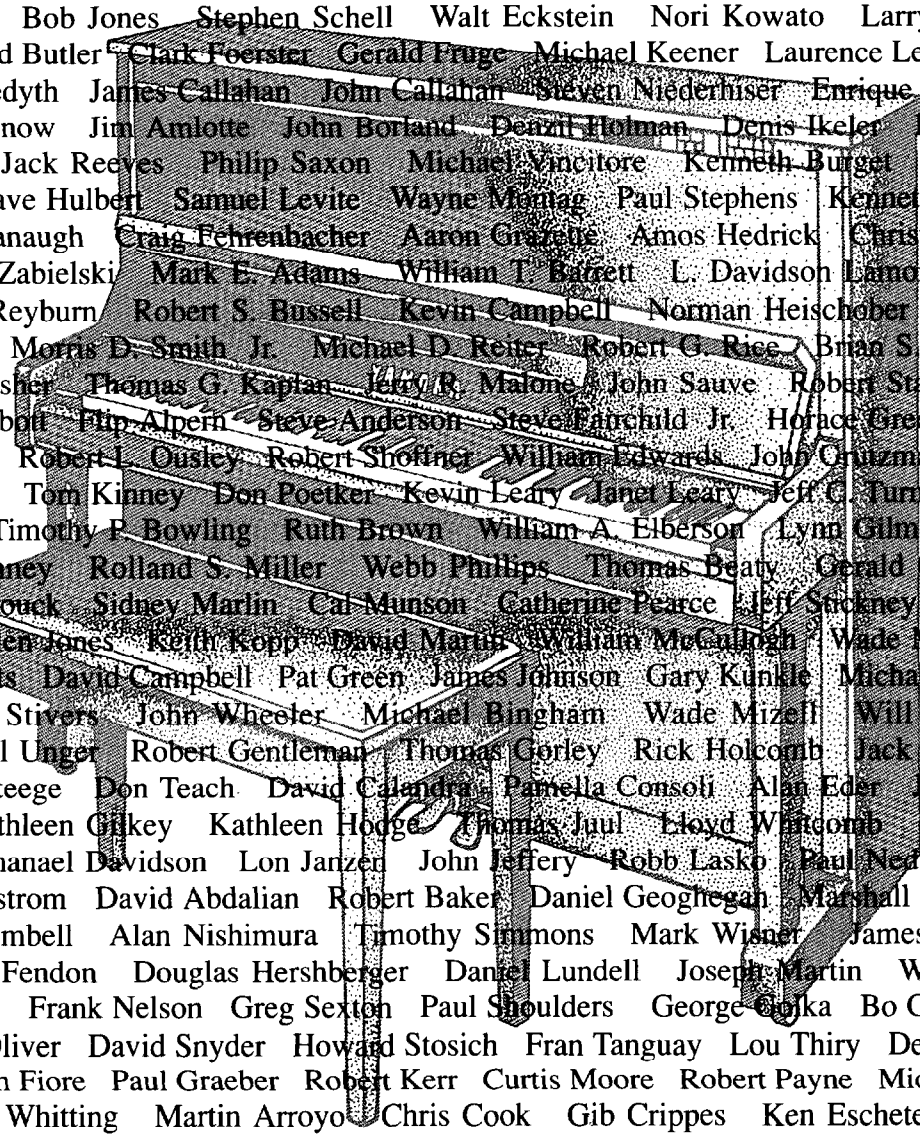

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