THE SOONER TUNER
Newsletter of The Oklahoma Chapter 731 of the Piano Technicians Guild, Inc.
DECEMBER 2005

COMING EVENTS

DECEMBER – Due to the holidays, there will not be a regular meeting this month. The PTG Christmas dinner was held on Friday, December 9 at the home of David and Barbara Bonham.

JANUARY – The January meeting will be held on Thursday, January 18 at 8:30 AM at The Larsen/Brook Mayes Music store located at the intersection of the NW Expressway and NW 63rd Street in Oklahoma City. The technical will be presented on the Disclavier system.

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WHAT DO YOU GET IF SANTA GOES DOWN THE CHIMNEY WHEN A FIRE IS LIT? (CRISP CRINGLE)

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TECH TIP – HOW TO WEIGH A GRAND PIANO

Take a scale on which you weigh your own weight.
Use a piece of stiff wood or a book to place between the caster of the piano leg and the scales.
Place these items under each leg of the grand, add the 3 numbers, and you will have the approximate weight of the grand piano.

Keith McGavern, RPT
Shawnee, OK

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WHAT DO SNOWMEN EAT FOR BREAKFAST? (FROSTED FLAKES)

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A MESSAGE FROM THE EDITOR:

Here we are again at this special time of year – Christmas! Or, I guess to be politically correct nowadays, I should say "a special winter holiday." Time has once again flown by. It seems like only yesterday I was preparing the newsletter for December 2004. This year in shopping for Christmas cards, I became increasingly more frustrated as I could not find cards with a nativity scene, angels or the words "Merry Christmas". The cards available on the market were illustrated with pictures of Santa, snowmen, elves, reindeer, Christmas trees, bells and the greetings were quite generic – Happy Holidays, Seasons Greetings. I finally settled on some cards with silver snowflakes and the words "Seasons Greetings" on the outside. Although the cards I sent were quite lovely, I felt an emptiness in my heart as I signed each one because the message seemed a bit hollow. As I reflected on the hundreds of cards I had looked through to find the ones I purchased, I became angry. What has happened in our society that we cannot acknowledge the reason that we celebrate Christmas? Who has the right to dictate the message we send to our friends and loved ones at this

special time of year? If we cannot mention “Christ” when we speak of Christmas, then why are we celebrating this holiday in the first place? I feel that it is time that we put the “holy” back into holidays and “Christ” back into Christmas. Let’s remember the true reason for this blessed season. As you celebrate Christmas this year, give and receive the warm feelings and acts of kindness, love, hope, harmony and peace. Remember that the best things in life are not “things”. The best presents that you can give to those you love are your time and your presence. May your Christmas this year be special and blessed and may Christ be the center of your celebration. Merry Christmas to each and every one of you and to your families.

Barbara Bonham, Editor

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WHY WAS SANTA’S LITTLE HELPER DEPRESSED? (HE HAD LOW “ELF” ESTEEM)

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INHARMONICITY

Inharmonicity exists in a piano string because of the fact that the tones of a piano are produced by tightly stretched strings. Inharmonicity does not exist in the organ, because its tones are produced by a vibrating column of air within a pipe (or by digital circuitry as the case may be), and not from tightly stretched strings. Let us say, for example, that the A above middle C (A=440) is produced by a string that is exactly 36 inches long. When it is set in vibration, it divides itself into two 18 inch sections; the mode occurring precisely halfway down the string. These two sections produce the second harmonic, which on paper should be A=880. (Many more divisions occur giving us the upper partials, but at this time, we will consider only the second harmonic). However, there is a factor that causes these harmonics to deviate slightly from their mathematically determined frequencies. The string producing the fundamental is the same string that produces the other harmonics. The proportion of the string’s thickness, length, and tension come into play here. The proportions of the string’s overall length producing the fundamental, and the proportion of the string’s dimensions producing the second harmonic are quite different. The thickness and tension are exactly the same, but the length is quite different. Therefore, the proportion of the thickness and tension to the length is much greater in the 18” sections than in the 36” section. It is much THICKER than the length producing the fundamental. Because it is THICKER, it is STIFFER, and because it is STIFFER, it is thrown a little sharp, so that the second harmonic might end up being, let us say, A=881.5. The fundamentals of these two notes are one octave from each other, and that is too great a distance to cause beats. Therefore, we tune A=880 to THE SECOND PARTIAL of A=440 (which is the same pitch), and that harmonic is now called a PARTIAL because it no longer conforms to exact multiples of the fundamental. Since this harmonic (A=880) has been thrown a little sharp (to A=881.5), we must stretch the fundamental of A=880 to A=881.5 in order for two notes to be beatless, and to keep the treble from sounding flat. This stretch factor extends to all the upper harmonics causing them to become sharper and sharper as we go up the series. Because of this, these harmonics are now referred to as upper partials, and not harmonics.

Many people incorrectly think that the treble should be stretched audibly sharp where we can hear beats. This is not so. When the fundamental of the upper note has been stretched sharp enough that it does not beat at all with the first partial of the lower octave, the note has been correctly stretched. This is the reason why electronic tuning aids got such a bad reputation. The first ones did not take into consideration the existence of inharmonicity and did not include a stretching factor as the recent ones do, so the upper octaves were tuned to exact double of the octave below them leaving the treble sounding quite flat. On paper this seemed correct, but to our ears, the result was completely unacceptable. The new electronic tuners of today do include a stretch factor and the end result can be entirely satisfactory. Pianos differ considerably in inharmonicity. Concert grand pianos have relatively little inharmonicity, whereas spinets have a great deal. This is why it is

a physical impossibility for a spinet and a concert grand to be in tune with themselves and with each other simultaneously, and needless to say, tonal quality is drastically different as is evidenced by the beautiful sound of the rich bass of a concert grand compared to the tinny, foolish sound of a spinet. The low A string of a spinet is less than 1/3 of the length of the low A string in a concert grand, and much thicker. That factor gives it a much different harmonic structure resulting in a much different sound "quality". That factor (inharmonicity) goes to show you that in a piano, we are dealing with an imperfect device, and compromises must be made. I really get a laugh when people tell me that they have "perfect pitch". Octaves are stretched quite differently from piano to piano, and with that in mind, we can quickly see that there is no such thing as perfection. Everything is a compromise.

D. Keith Morgan
Oklahoma City, OK

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WHAT DO YOU GET WHEN YOU CROSS A SNOWMAN AND A VAMPIRE? (FROST BITE)

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Merry Christmas to all!

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President – Bob Scheer
Vice President – David Bonham
Secretary – Nathan Sobel
Treasurer – Gary Bruce
Newsletter Editor – Barbara Bonham

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