Extended Piano Techniques for Intermediate and Early Advanced Students

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EXTENDED PIANO TECHNIQUES FOR INTERMEDIATE AND EARLY ADVANCED STUDENTS

by

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ABSTRACT

The purpose of this study is to provide intermediate and early advanced students and their teachers with a better understanding of extended piano techniques. These techniques are characterized by unconventional keyboard practices, including inside-the-piano string techniques, and auxiliary sounds. Students and teachers may have little knowledge about these unconventional methods, as one must learn to decipher new symbols and idioms. Therefore, extended piano pieces are not commonly performed or taught. This study can help teachers and students gain the knowledge to read and perform this music confidently. It will focus on performance repertoire since 1930 from a select group of international composers.

Chapter one addresses the importance of piano students learning unconventional music and how extended techniques reflect changing musical values. It also summarizes the beginnings and historical significance of extended techniques and identifies techniques of extended piano pieces appropriate for the intermediate and early advanced level students. The repertoire discussed in this paper will be divided into two categories: late intermediate and early advanced. Chapter two focuses on special keyboard techniques, including tone clusters and sympathetic vibrations. Chapter three discusses string piano techniques, which include pizzicatos, glissandos, muting, and harmonics. Chapter four discusses auxiliary sounds. Chapter five addresses the problems that may arise with using extended techniques. This treatise includes my personal experience teaching and practicing extended piano techniques and provides an index to help readers locate pieces. It is my hope that this document will encourage performers to learn extended techniques and experience a new musical world.
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CHAPTER 1
INTRODUCTION

Extended piano techniques include unconventional keyboard practices such as forming clusters executing sympathetic vibrations and various string piano techniques. These techniques provide opportunities of expanding our understanding of the capabilities of the piano. In addition, one becomes more aware of how the instrument functions, how sounds are produced, and what potential exists for other sounds as well. Performers can create their own sounds, thereby expanding their palette of sounds and colors.

One of the important duties of the teacher is to introduce repertoire across genres and periods. Variety in music studies has an important influence on cultivating students’ musicality and learning new musical skills. Modern music should be introduced to students to explore how extended techniques are used. Frank J. Potamkin states, “If the introduction of modern music is delayed until the pupil is very advanced, the pupil may then be found to be unable to cope with its complexities.”\(^1\) Both teachers and students will benefit from learning how to play extended techniques if introduced to it at an early stage.

**Pioneers**

Henry Cowell (1897-1965) was an early proponent of extended piano techniques. Around 1912, Cowell began to employ special techniques on the keyboard and strings to produce new timbres both from inside the piano and on the strings. His unconventional approach included keyboard techniques on the piano such as clusters and sympathetic vibrations. He described the cluster as “chords built from major and minor seconds, which in turn may be derived from the

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upper reaches of the overtone series.”\textsuperscript{2} A tone cluster is a dissonant group of adjacent tones played together with the hands, fists, elbows, or forearms. \textit{The Tides of Manaunaun} (1917) is one of Cowell’s early works and requires forearm clusters and palm clusters. He also uses string piano techniques, playing directly on the strings with the fingers or hands by sweeping across the strings (glissando) or plucking strings (pizzicato) inside the piano. \textit{Aeolian Harp} (1923) is performed entirely on the strings of the piano. Cowell employs some of these techniques in short piano pieces such as \textit{The Banshee} (1925; glissando, pizzicato, and sweeping the string along its length) and \textit{Sinister Resonance} (1930; muting the strings of the piano). He combines both tone clusters and plucked strings in \textit{The Fairy Bells} (1929). Cowell’s music directly influenced his student John Cage (1912-1992), who developed the “prepared piano” by inserting stationary objects in the strings.

George Crumb (1929-2022) is a well-known American composer who used extended piano techniques. His compositions explore various new timbres from both the keyboard and the piano’s interior. He created his own unique sound in his exploration of new sonorities and unusual pianistic effects. His piano works consistently employ new sonorities: \textit{Five Pieces for Piano} (1962), \textit{Makrokosmos Volume I} (1973), and \textit{Volume II} (1974), \textit{A Little Suite for Christmas} (1980), \textit{Gnomic Variations} (1981), \textit{Processional} (1983), \textit{Eine Kleine Mitternachtsmusik} (2001), and \textit{Metamorphoses Books I} (2017) and \textit{II} (2020). He developed his own notational system and introduced vocalizations as well. Among the composers whom Crumb states most influenced him are Henry Cowell, Ross Lee Finney, Claude Debussy, Anton Webern, and Béla Bartók. Most of his piano works are at the artist level, but some piano works such as “Berceuse for the Infant Jesu” from \textit{A Little Suite for Christmas} are appropriate for early advanced students.

Makrokosmos Volumes I and II are typical of Crumb’s style of music for amplified piano. Crumb has specific instructions: (a) use a conventional microphone suspended over the bass strings, (b) set the volume high to emphasize the loudest passages, but without distortion (c) enhance vocal effects, and (d) maintain the same level of amplification during the performance. Each volume consists of twelve fantasy-pieces. These twenty-four fantasy pieces explore unusual timbres and sonorities in a wide range of clusters and various string techniques of sweeping, plucking, muting, and forming sympathetic vibrations. Crumb also creates unusual sonorities through external devices such as glass tumblers, paperclips, a metal chain, paper, and thimbles inside the piano or as performance aids. Some works include vocalizations such as shouting, whistling, moaning, speaking, groaning, and singing. Another interesting aspect of his music is holding the damper pedal to sustain sounds through timed silences that often continue to the next piece. “Genesis I” from Makrokosmos Volume I uses a metal chain inside the piano and string glissandos with both fingernails and fingertips. In “Crucifixus,” the pianist shouts “Christe.” “The Phantom Gondolier” has the performer playing string glissandos and tremolos with thimbles, string pizzicatos, humming/moaning on the half-sung words “Irimiru,” and “Karabrao,” as well as hissing “Hass!” “Night Spell” includes other unusual effects with second-partial harmonics and whistling the melody of “Will There Be Any Stars in my Crown?” Crumb’s solo piano works have descriptive titles to help direct the performer to an appropriate emotional characterization. Crumb uses visual imagery in his scores to unify both volumes of Makrokosmos. The composer emphasizes the compositional structure of the set by notating the last piece of each group of four as a “symbol.” For example, in volume I of Makrokosmos, “Crucifixus” is notated in the shape of the cross. “The Magic Circle of Infinity” appears in a circular shape, and “Spiral Galaxy” No. 12 is notated as a spiral.
Ross Lee Finney (1906-1997) was a composer who often used nontraditional techniques. His *32 Piano Games* (1969) is a worthy pedagogical contribution to contemporary music for children. It includes special clusters, graphic notation, improvisation, and glissandos. He had a great influence on the musical language of his students, William Bolcom (b. 1938), George Crumb, and William Albright (1944-1998). Finney never restricted his students to any particular style, though analysis in his seminar dealt with mainstream composers such as Bartók, Schoenberg, Webern, and Stravinsky. He encouraged his students to form their own stylistic viewpoints. Crumb reflects on Finney in his interview with Robert Shuffett: “Ross’s approach stressed technique: he insisted on the need for constant rewriting, he emphasized the necessity for logical form and the right notes, and he expected a meticulous notation.” Although his style did not evolve until after his college years with his *Five Pieces for Piano* in 1962, Crumb said he was grateful for the sense of discipline Finney instilled in him.

Other twentieth-century composers such as Emma Lou Diemer, Seymour Bernstein, Alan Hovhaness, György Ligeti, William Bolcom, Samuel Adler, and Paul Cooper utilized extended piano techniques and non-traditional notation.

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4 Gillespie, *Georges Crumb*, 34.
Importance of Learning Extended Technique for Intermediate/Early Advanced Students

The acquisition of basic extended-technique skills should be part of the musical education of piano students. Among other benefits, it will help them develop a sensitive ear for tone colors, dynamic levels, and balance. According to Jean-François Proulx, “These qualities are useful even in traditional piano playing and chamber music. Students who develop a strong affinity for extended techniques could then delve deeper into this subject if they wish.”5 In addition, students learn more about how the piano actually works. Therefore, students can further stimulate their imagination and creativity.

Literature Dealing with Extended Piano Techniques

Primary sources for this study include selected piano scores as well as an excellent resource book addressing extended piano techniques, The Contemporary Piano: A Performer and Composer’s Guide to Techniques and Resources by Alan Shockley. Originally written as a dissertation and subsequently published as a book, it is a comprehensive resource for composers writing music using unconventional techniques for the piano and for pianists interested in playing this repertoire.6 Shockley also discusses ways of protecting instruments from damage. The book is useful for pianists who want to understand the mechanical workings of the modern piano. There are several illustrations of different piano makes and models that help to explain how and where to play string techniques. Shockley also provides detailed instructions for both composers and performers of unconventional music.

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Secondary Resources

Some dissertations have focused on extended piano techniques. Jean-François Proulx in his dissertation, “A Pedagogical Guide to Extended Piano Techniques,” provides a six-chapter pedagogical guide that teaches students unconventional techniques and focuses on keyboard and string techniques. The dissertation discusses practical exercises and includes detailed instructions explaining how to execute and practice each technique. Proulx’s dissertation is useful for introducing teachers and students to string techniques. Some exercise pieces involving pizzicato and plucking techniques are helpful in mastering the execution of intervallic movement between strings as string playing requires pianists to find the correct strings without the aid of a keyboard.7

“Extended Piano Techniques: In Theory, History and Performance Practice” by Luc Paul Frank Vaes expounds on the historical development of extended techniques by several composers.8 Vaes helpfully categorizes pieces according to their level of difficulty. He compares the internal layout of different grand pianos, which is useful for understanding the internal structure of grand pianos. The most useful resource is his detailed measurement of present-day piano models. He compares different pianos by illustrating the layout of the plate sections and crossbeams, which divide the differently strung choruses. This information helps the pianist plan playing glissandos by enabling them to identify exact strings from their location to the left or right of the crossbeams on specific grand pianos.

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Reiko Ishii’s dissertation, “The Development of Extended Piano Techniques,” focuses on the development of extended techniques for the piano through a study of selected piano works by American composers. It considers extended techniques in the context of historical development. Ishii’s dissertation categorizes four important classifications of extended piano techniques: “1) special effects produced on the keyboard, 2) performance inside the piano, 3) performance inside the piano with one hand and on the keyboard with the other, and 4) addition of foreign materials.” Ishii’s dissertation is useful to introduce pieces by various historical composers. In addition, it explores how extended piano techniques have changed and were developed by later composers.

Chun Yung Hae, in her 1982 dissertation “The Extension of Piano Techniques in Compositions by George Crumb for Solo Piano,” examines the extended techniques of George Crumb’s solo piano works. (After 1982, Crumb continued to compose many more extended piano works.) This study discusses keyboard and string techniques, the use of additional materials, vocalization, and explains special tools needed to create special timbres. The specific explanation of symbols for extended techniques is helpful in understanding other composers’ symbols. Crumb uses his own style of symbols, and his works influenced later composers who use similar or identical symbols.

The dissertation by Amy Tarantino, “Unconventional Notation: A Pianist’s Guide to Intent and Execution,” provides an extensive guide to unconventional notational practices, directing the reader to notational techniques and relevant repertoire involved in the development...
and interpretation of such practices.\textsuperscript{10} It not only provides extended piano keyboard and string techniques, but also includes resources on pitch representation, intensity and mode of attack, timbral effects, rhythm, meter, and tempo for both performers and composers. The author recommends several useful pieces for early advanced students. She also explains the meaning of symbols by each composer. Therefore, this study can be a good resource for teachers and students. Tarantino states that “Learning to interpret new notational symbols results in greater awareness and understanding of the elemental shifts of emphasis that characterize the musical language of today.”\textsuperscript{11}

Kevin Richmond’s dissertation, “Non-traditional Notation, and Techniques in Student Piano Repertoire,” discusses many advantages of introducing children to nontraditional notation and techniques at an early age.\textsuperscript{12} He also explains symbols by several composers. He includes extended-technique pieces for students from beginner to advanced. Richmond arranges works by grade levels (I-XII) of non-traditional methods present in each composition and provides a list of criteria for grading the compositions.

Chia-Shan Yang’s dissertation, “Exploring New Techniques in Contemporary Piano Music: A Guide for the Intermediate-Grade Student,” offers a list of 120 pieces written after 1940 that use innovative devices.\textsuperscript{13} It also describes each extended piano technique and provides

\textsuperscript{10} Amy Tarantino, “Unconventional Notation: A Pianist’s Guide to Intent and Execution” (DMA monograph, The University of Miami, 2006).

\textsuperscript{11} Tarantino, “Unconventional Notation,” v.

\textsuperscript{12} Kevin Richmond, “Non-Traditional Notation and Techniques in Student Piano Repertoire” (DMA. Treatise, University of Texas at Austin, 2003).

examples. Yang lists numerous performance pieces for both intermediate and early advanced students.

Unlike Yang’s dissertation, the current dissertation will: 1) address the pedagogical benefits of learning extended techniques, 2) make suggestions for practice, 3) identify difficult passages, and 4) explain how to apply extended techniques on an upright piano. My dissertation includes pieces that she did not cover. In her thesis, the description of the string technique is not particularly detailed. This study explains a more detailed analysis of the score and includes which hand to play the strings for the student’s understanding.

**Pedagogical Materials**

Many sources provide graded lists of various works, which are useful in selecting appropriate repertoire. Maurice Hinson’s Comprehensive *Guide to the Pianist’s Repertoire* and *Guide to the Pianist’s Repertoire: Supplement* describes selected solo piano works of approximately two thousand composers.\(^{14}\) It includes bibliographical references and a useful index. The index contains compositions for prepared piano and includes several lesser-known composers. Hinson includes extended-technique compositions in his “Prepared Piano” index.

Among these compositions are some of John Cage’s (1912-1992) works, in which objects like glass, paper, and bolts are placed on and between the strings. Although there isn’t a separate list of extended piano techniques, Hinson’s book contains lists of solo piano works including those by George Crumb and Henry Cowell. He also describes the style, any individual characteristics, and the level of difficulty of each piece. This reference provides useful information such as the number of pages, performance time, publisher, and edition information.

Comments on compositional style, technique, and notable characteristics of specific works are very useful.

Stanley Butler’s *Guide to the Best in Contemporary Piano Music: An Annotated List of Graded Solo Piano Music* is a bibliography providing musical and pianistic observations on 1500 diverse contemporary pieces.\(^{15}\) Butler divides the music into eight levels of difficulty and is useful for selecting repertoire for intermediate students.

**Criteria to Consider When Choosing Repertoire**

The evaluation of the difficulty of each piece included in this study stems from Maurice Hinson’s Comprehensive *Guide to the Pianist’s Repertoire*. Hinson uses four broad categories: Easy, Intermediate (Int), Moderately Difficult (M-D), which are referred to in this paper as “early advanced,” and Difficult (D). Each level is defined by several characteristics related to technical and musical characteristics. This paper focuses on selected compositions that are categorized as intermediate, moderately difficult, or difficult.

The following standard works will serve as examples of the grading:\(^{16}\)

**Int:** Bach, *Twelve Little Preludes and Fugues*

Beethoven, *Ecossaises*

Mendelssohn, *Children’s Pieces Op.72*

Bartok, *Rumanian Folk Dances 1-5*

**M-D:** Bach, *French Suites, English Suites*

Mozart, *Sonatas*


Instructors must also use several additional criteria when choosing pieces for their students by considering their age and level. This is particularly important when students use inside-the-piano techniques such as muting, glissandos, pizzicatos, etc. The teacher must consider the physicality of each student. If the pianist is not tall enough to reach the strings under the lid or does not have long enough arms to comfortably reach the strings, it will be impractical for them to sit while plucking, especially during the early learning stages. For younger and physically smaller intermediate-level students, playing small group clusters is the easiest and the most comfortable technique to master. For intermediate-level piano students who are physically smaller, performing large arm clusters proves to be the most challenging keyboard technique. Most important is motivating the student's intention to learn and maintaining their interest.

**Characteristics of Intermediate Level**

**Technical Characteristics**

- Major, minor, and chromatic scales
- Two or three-note textures in one hand
- Clusters of 2\textsuperscript{nd}, 3\textsuperscript{rd}, 5\textsuperscript{th} intervals, palm, and forearm.
- Use of different articulations between hands
- The range of dynamics $ppp$-$ff$
- A range spanning of up to 3 octaves
- Length up to 3 pages
- Simple use of string glissandos
- Use of both sostenuto and soft pedals simultaneously
• Thin textures
• Simple asymmetric meter
• Moderate ostinato

**Characteristics of Early Advanced Level**

• Shift hands quickly between strings and keyboard
• Rapidly repeating clusters
• Arm chromatic clusters bringing out top melodic lines
• Potential to use all three pedals
• Standing and sitting quickly between playing on the keyboard and interior
• Wide range of dynamics
• Polyrhythms, polymeters, and different key signatures between the clefs
• Extended ranges of chromatics, 12 tones, and whole-tones scales
• Increased use of various objects to create auxiliary sounds.
• Complicated rhythms
• Wide range of string glissandos

This paper will use the nomenclature of American standard pitch notation (ASPN) and international pitch notation (IPN) to specify musical pitch, combining the name of a musical note with a number identifying the pitch’s octave. For example, middle C is C₄.
CHAPTER 2
SPECIAL KEYBOARD TECHNIQUES FOUND IN INTERMEDIATE AND EARLY ADVANCED REPERTOIRE

Clusters

Cluster techniques are easily accessible in current piano method books making it easy to introduce them to students. Pianists can play clusters with the fingers, the fist, the palms, or the arms, depending on the extent of the cluster. Playing clusters is enjoyable for the performer because of both the sound and the physicality as it introduces new freedom in the approach to the piano. Intermediate students can begin with clusters of a small range such as two, three, four, and five notes played by the fingers. Subsequently, they can extend to forearm clusters. When students play forearm clusters, they can play with their hands open or closed depending on the range of notes. If students have short arms, they can play with their hands open. In contrast, if students have long arms, they can play with their hands closed. Students may also have a hard time quickly transitioning from the forearm cluster to playing with a normal hand position.

Notation of Clusters

Cluster notation is indicated differently from one composer or score to another. The notation also differs depending on the range of notes. Generally, palm, finger, or fist clusters are shown as rectangular note heads or vertical bars connecting the highest and lowest notated pitches (Example 2.1). Small white boxes indicate clusters on the white keys, and small black boxes refer to the black keys. However, some composers use black box clusters for white keys and the black key cluster is marked with a flat on the left. Clusters are often notated to indicate an exact pitch range or may also indicate the direction of playing upward or downward.

Cowell’s cluster symbols influenced other composers. Cowell uses three basic types of clusters: white keys, black keys, and chromatic clusters (Example 2.2). He uses a very long stem
connecting the outer notes of each cluster. There are specific outer notes indicating the upper and lower notes. In addition, a black key cluster will show sharp or flat indications. Lou Harrison, a student of Cowell, uses the same cluster notation in his piano works.


the symbol stands for (all played together)

the symbol stands for

the symbol stands for

the symbol stands for


**Intermediate Repertoire**

Some intermediate students show interest in and enjoy learning new musical genres, while some do not. Introducing students to clusters with specifically written notes helps them become used to seeing chromatics or other groups of notes so that they can accept new sounds
and become willing to learn new symbols. *The Sense of Touch, No. VIII* (1983) by Samuel Adler (b. 1928) requires the student to achieve a balance in dynamics between repeating the right hand’s clusters of specific notes (students tend to play these too loudly) and the left hand’s melodic line (students need to play this louder).

**Practice recommendations.** There are several difficult techniques used in *The Sense of Touch*, which include 1) frequently switching between articulations of staccato, legato, and tenuto, 2) playing many accidentals in individual clusters, 3) playing clusters in the highest and lowest registers, and 4) switching melodic lines between hands (Example 2.3). Older students can shift their hands from the highest and lowest notes and control the balance of their hands to bring out the melodic lines more easily. Therefore, this piece is better suited for older students than younger students.

This piece begins by alternating white clusters using the right hand and black key clusters using the left hand. The overall rhythm consists of eighth and quarter notes, and occasionally the melody is played by the left hand. In measure 20, the symbol (*) indicates that rectangular black boxes in mm. 20 to 23 are to be played as tone clusters in the highest and lowest registers. Here, both hands must play both black and white keys at the dynamic ff. There are eighth-note rests before playing the clusters or shifting hands, which allows time for students to prepare to play the clusters.

Students must rapidly move back to the center of the piano after playing in the extreme registers in order to play a white-key cluster (E₄/F₄/G₄/A₄/B₄) with the right hand at the dynamic p in measures 24 to 32 and the melodic lines with the left hand at the dynamic mf. In contrast to the softer clusters using the right hand, students must learn to emphasize the melodic lines using the left hand. To accomplish this, I advise practicing the melodic lines, while leaving the clusters
silent. Students can bring out the melodic lines distinctly after practicing this exercise. They can practice this in different measures (mm. 12-19). Students must learn to master various dynamics in each melodic line. Intermediate students are comfortable playing a range of dynamics, from \( pp-ff \). However, this piece extends the dynamic range to \( fff \) in its last three measures and is played tenuto. Young students who play the dynamic \( fff \) usually play much softer than an adult performer. They can rectify this by playing the clusters with their entire forearms, not with just their hands.

After playing the clusters, students often struggle to move their hands back to the center of the keyboard, which makes it challenging to find the next notes in a quick tempo. Students can practice moving each hand to the next measure by playing the hands individually. By doing this, muscle memory is developed in their hands and arms, enabling them to effectively remember the intervals.


Stephen Chatman (b.1950) writes non-traditional pieces for beginning and intermediate students in *Amusements, Books 1-3*. “Freak Out” from *Amusements, Book 2* asks for palm and
forearm clusters at the end of the piece and provides a good introduction for intermediate students to learn a wide range of clusters and new symbols. This piece has precise notations of meter, rhythm, dynamics, and articulations, and pitch, with the exception of clusters that are notated in an approximate range.

**Practice recommendations.** This piece is suitable for both younger and intermediate students. The benefit of learning this piece is that students can experience playing both hand and forearm clusters. Also, the composer notes that students can improvise random pitches within a given general pitch range. Thus, students can create their own melodies while the composer supplies the meter, specific rhythm, dynamics, and articulations. I recommend that students practice only rhythms with articulations and dynamics on the top of the fallboard instead of playing on the keyboard. In mm. 10-12, the clusters in the different octaves have an approximate range of notes. I recommend that students decide on the lowest approximate notes of each cluster and remember this rather than deciding during a performance. In measure 12, there are forearm clusters extending across a wide range of keys, but students can play only as many notes as they are able to since the clusters do not have a specific range notated.

Example 2.4. Chatman, “Freak Out” from *Amusements Book 3* (Mississauga, ON, Canada: The Frederick Harris Music Co., 1989), mm. 9-11.
Seymour Bernstein’s (b. 1927) “The Guinea Hen” from *Birds, Book 2* is an appropriate piece to introduce the palm cluster for intermediate students for study and performance. Small white boxes indicate white key clusters, and small black boxes specify black-key clusters.

**Practice recommendations.** In mm. 1-2, students might often play the rapid thirty-second notes unevenly. To make a clear steady sound, students should practice the thirty-second notes using different rhythms. For instance, students can play the notes using dotted rhythms (dotted sixteenth note followed by thirty-second note). The long and short divisions of the note values should be switched as well (thirty-second notes followed by a dotted sixteenth).

In measures 3-4, students play by slapping palms on the keyboard and starting on the highest treble notes and moving downward and upward as indicated with a specific rhythmic pattern of sixteenth notes. It is helpful to decide the first note of each cluster instead of changing randomly during the practice time.

Later in this piece (mm. 9-11), Bernstein indicates that the left hand plays the highest three black keys, and the right palm (or fingers) plays the highest white keys. It is particularly challenging for intermediate students to play the three clusters in an extreme crescendo (*p-fff*). Some students have trouble making a long crescendo and instead play too loudly and too quickly. In order to produce a gradual crescendo, it helps if students decide what clusters should be played *p, mp, mf, f*, and *ff*, in advance (m. 10). Students can distinguish these dynamics by playing without the pedal.
Ross Lee Finney (1906-1997) uses square-shaped note-heads to indicate cluster intervals of thirds, fours, and fifths (Example 2.6) in *32 Piano Games*. The number over the cluster indicates the number of notes. He also indicates whether the performer must play with the fingers or palm. “Arapaho” utilizes only five-note clusters (Example 2.7 m. 12). The clusters are confined to the white keys C/D/E/F/G.
Practice recommendations. This piece works well when a teacher first presents the symbol of a cluster to upper intermediate students. Students simply play the entire piece at different dynamics using the clusters that are limited to the white keys C/D/E/F/G. When playing clusters in the dynamic $p$ in measures 27-28, students must keep the left hand as close as possible to the keys to create a soft sound. Students often play this section loudly because their hand is too far from the keyboard.

Early Advanced Repertoire

“Amiable Conversation” from Dynamic Motion (1916) by Henry Cowell provides an excellent introduction to the forearm cluster for early advanced students. In my experience, many students are pleasantly surprised or puzzled when they first see cluster symbols or hear a wide-range cluster. They have never before seen these symbols or heard tone clusters. Most students
have fun practicing clusters of simple rhythms. For students, bringing out the melodic lines while the opposing hand/arm plays the clusters can be challenging.

**Practice recommendations.** “Amiable Conversation” begins with a two-octave forearm cluster from C₄ to C₆ in the right arm (mm. 1-11). The rhythm of the cluster is simply quarter notes and melodic lines are played mostly on the black keys in the left hand. In mm. 12-23, the melodic line appears in the right hand accompanied by two-octave clusters, spanning from F#₁ to F#₃, played with the left arm. It can be challenging to change clusters from one arm to the other (mm. 24-35), which occurs every two measures.

When practicing the forearm cluster, students should lean forward to execute them. However, this is tiring and can cause back strain. This can be remedied by keeping the shoulder and arm relaxed. It is important for students to take several breaks while practicing these forearm clusters. Also, students should play the melodic line louder than the forearm clusters. Students often play the staccato forearm clusters too far from the keyboards when producing a short sound. Thus, it is challenging to produce forearm clusters evenly and to press all the keys at the same time without missing any notes. To avoid this problem, students must play with their arms very close to the keys. It can be helpful if the student practices clusters without the melodic lines from m. 22 at a slow tempo to learn the distance between the right-hand cluster and left-hand cluster. Players should practice slowly, listening to the balance of sound, so that they can play all the notes without missing any.

The American composer Lou Harrison (1917-2003) studied with Henry Cowell and Arnold Schoenberg. The *Reel* (“Homage to Henry Cowell”) was greatly influenced by Cowell.\(^1\) The symbols for clusters in *Reel* are very similar to Cowell’s. The *Reel* has two kinds of clusters: one with the palm spanning an octave and the other with the arm spanning two octaves. He uses a very long stem connecting the outer notes of each cluster. There are specific outer ranges designating the upper and lower notes. Before playing this piece, performers must check the key signature. A large sharp on the treble clef indicates that all notes must be played on the black keys. A large natural sign on the bass clef indicates playing on the white keys unless accidentals are used. The form is a Rondo. A (mm. 1-8); A1 (mm. 8-16); B (mm. 16-26); A2 (mm. 26-34); C (mm. 34-44); A1 (mm. 44-52); D (mm. 52-63); A1 (mm. 63-71); C (mm. 71-81); A2 (mm. 81-

89). Theme A begins in m. 1 and becomes palm clusters in mm. 8-16 (A1). There are extended right forearm clusters in mm. 26-34 (A2). Measures 44-52 and 63-71 revert back to palm clusters (A1), and mm. 81-end use half-arm clusters with ff dynamics.

**Practice recommendations.** This work is best suited for older or taller students because the forearm cluster encompasses two octaves. The palm (octave) groups on the black keys are shown in Example 2.9. In mm. 8-11, a performer should put more pressure on the thumb rather than playing all the notes loudly at the same time when playing these palm clusters. They can hear the distinct melodic lines and their right hand becomes much less tired. In Example 2.10, performers can play the forearm cluster with an open hand or closed fist depending on the register of notes. Harrison noted in the score that the forearm clusters on the black keys should highlight the lower notes. The left-hand repeats ostinato-like figures as the right hand’s large cluster span plays the melody. The lowest notes of the forearm clusters in this composition are highlighted by Harrison’s notes in his score.² The low melodic lines can be brought out in accordance with the score with the use of the fist. The fifth finger can highlight the bottom note if the player strikes the fist in the direction of the fallboard. To play all notes equally when practicing right forearm clusters in staccato, musicians should not lift their forearms and shoulders too high.


*Battle of Manassas* (1866) by Thomas “Blind Tom” Wiggins (1849-1908) is an effective concert piece for early advanced students that presents both palm clusters and vocalization. Thomas Wiggins was born blind and a slave in Columbus, Georgia. He did not have any formal musical education but composed both classical and popular pieces. *Battle of Manassas* uses famous patriotic melodies including “The Girl I Left behind Me,” “Dixie,” “Yankee Doodle,” and “The Marseillaise.” It is a tone poem for piano that depicts the opening battle of the U.S. Civil war. The battles of Bull Run, called “Manassas” by the Confederates, were fought at Manassas, Virginia on July 21, 1861, and August 29 and 30, 1862.3 The structure of *Battle of Manassas*, as described by Hinson: Introduction m. 1-8; A mm. 8-29; B mm. 29-62; C mm. 62-78; transition mm. 79-88; D mm. 88-109; E mm. 109-35; F mm. 135-69; G mm. 169-77; H mm. 177-14; Coda mm. 214-25.

This piece includes various tempos, keys, rhythms, meters, and techniques. Two different editions, S. Brainard Sons (1894) and Alfred Music (edited by Maurice Hinson, 2010) use different symbols for clusters. Brainard’s score indicates clusters as circles with a vertical line in the middle (Φ) whereas the Alfred edition uses rectangular white and black boxes. It is assumed

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that the cluster symbol was changed in the modern edition for a better understanding of its meaning to the performer.

The Brainard edition notes that the cannon sounds are played by striking both hands if both are at liberty; if not, with the left hand alone. When the left-hand cluster plays alone, it should be with the flat of the hand, on many notes as possible, and with as much force as possible, in the bass of the piano. 4

**Practice Recommendations.** There is no detailed indication or explanation about the rhythm of the clusters. They are notated without a rhythmic context in mm. 143-148 (Φ Φ Φ), but their placement in the measure suggests two eighth notes followed by a quarter note. Magdalena Baczewska performs these three clusters consistently in this manner. Different performers play different rhythms and can freely express themselves by changing rhythms since nothing exact is notated. For example, Jeremy Denk plays different rhythms in his own unique way (Example 2.11). He performs the three like Baczewska, as two eighth notes followed by a quarter note, but also plays them as a dotted eighth followed by a sixteenth and a quarter note in different places of the piece.5 In his edition, Hinson includes specific instructions about cluster rhythms. He indicates the specific range of notes and rhythms (Example 2.12). Hinson changes the cluster notation to quarter-note pairs—not in groups of three. There are many video/audio recordings for performers to explore possibilities. Performers can then make their own decisions about executing the clusters.

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4 Tom Wiggins, “The Battle of Manassas: For the Piano” (Cleveland: S. Brainard’s Sons, 1866), 7.

Example 2.11. *Battle of Manassas* (1866), by Thomas “Blind Tom” Wiggins (Cleveland: S. Brainard Sons, 1894), mm. 143-48.

Sympathetic Vibrations

Performers produce sympathetic vibrations by depressing keys silently. The raised dampers allow only those strings to vibrate sympathetically when other notes are played. Acoustically, in the piano, the sound oscillations are produced either by the hammers striking the strings or by allowing undamped strings to vibrate, resulting in a mixture of overtones and harmonics producing beautiful and complex sounds.

The silently depressed key technique, employing a natural property of acoustics, has been used by Schoenberg, Cowell, Bartók, Crumb, and others. In these composers’ pieces, they often indicate that the pianist first strikes the keys with the damper pedal down, then re-take certain keys silently before releasing the pedal. In Schoenberg’s *Drei Klavierstücke* (“Three Piano Pieces”), Op. 11 (1910), the performer silently depresses the chord (F/A/C#/E) in the right hand while the left-hand plays the melodic lines in different octaves. Schoenberg uses diamond-shaped noteheads to indicate silently-depressed keys. In *Mikrokosmos Volume IV, No.102* (“Harmonic,” 1945), Bartók achieves interesting harmonic effects when keys are silently pressed down, and multiples of their frequencies vibrate sympathetically. The left-hand B major chord is played and then held down with or without the sostenuto pedal from beginning to end while the right hand plays the melody (Example 2.13).

To create sympathetic vibrations, performers have the option of using the sostenuto pedal alone, the sostenuto pedal in conjunction with the damper pedal, or none of the pedals at all. In his piano compositions, Crumb also employs this sympathetic vibration. His “Crows Over the Wheat Field” from *Metamorphoses Book I* demonstrates sympathetic vibrations, using both the damper and sostenuto pedals. The overtones of the bass notes held by the sostenuto first emerge when the damper pedal is released at the end of example 2.14.


**Notation of Silently Depressing Keys**

The notation of silently depressed keys is generally indicated by diamond or triangular-shaped noteheads. If notes are clusters, the same symbols of clusters are used such as vertical lines with an “x” or diamond shape. In the same measure, the performer depresses the keys silently and secures them with the sostenuto pedal while other keys are struck.
Intermediate Repertoire

“Ein Kinderspiel” from Seven Little Pieces for Piano (1980) by Helmut Lachenmann (b. 1935) is helpful for introducing new sonorities such as clusters, sympathetic vibration, bitonal music, and unusual time signatures and notations to intermediate students. All seven pieces use sympathetic vibrations, indicated by diamond-shaped clusters, as in Example 2.15. Performers play a chromatic cluster by silently pressing down the keys using the left palm facing down, while the right-hand plays keys to produce the mixture of resonating overtones.

Example 2.15. Lachenmann’s diamond-shaped cluster

Lachenmann uses other sympathetic vibration notes, with long-held tones indicated by thick, horizontal bars whenever they enter one after another within one hand in the three pieces Hänschen klein, Akiko, and Bell Tower. The horizontal bars visually illustrate the overlapping sounds, making the passage easier to understand and execute.

Example 2.16. Lachenmann’s long-held tones

In No. 1, HänschKlen, the diamond-shaped notes show clusters depressed silently with the left hand while the sostenuto pedal is depressed. The clusters have specific note ranges. It can be challenging for young students to play the span of an octave.
**Practice recommendations.** This piece requires students to play across the entire keyboard from extremely low to high. Rhythms in this piece are easy to execute while crossing hands and the student can easily play the melodic lines in various octaves. If students play a piano lacking a sostenuto pedal, they can use heavy books or materials to hold down the keys to free up the strings.\(^6\) There are many places to cross hands with frequently changing dynamics, which creates a very colorful sound. In mm. 5-8, the grace notes can interrupt the steadiness of the rhythm as the melodic lines descend by half steps from B\(_4\) to Db\(_4\). To practice this piece, a performer can first play this section without the grace notes, becoming aware of the chromatic movement. Another challenge is playing the chromatic scale in thirds. When students play such a long chromatic scale of thirds, they must play with a consistent fingering plan.

\(^6\) Kevin David Richmond, “Non-Traditional Notation and Techniques in Student Piano Repertoire” (DMA., The University of Texas at Austin, 2003), 65.
Example 2.17. Lachenmann, “Hänschen Klein” from Ein Kinderspiel/Child’s Play (Germany: Breitkopf & Härtel, 1982), mm. 5-12.

Adventures in Sound for Piano (For the Intermediate Level Student), composed in 1987 by Emma Lou Diemer, contains various contemporary music styles. The set is comprised of fifteen individual pieces, each piece with a descriptive title. A few pieces provide extended piano techniques such as “Fist Dance” (four-finger clusters), “Hazy Afternoon” (five-finger clusters), “Jazz Echoes” (sympathetic vibrations), “Old Spanish Town” (auxiliary sounds), and “A Harp in the Sky” (string plucking). “Jazz Echoes” is a good way to introduce intermediate students to beautiful sympathetic resonances.

Practice Recommendations. In the first measure of example 2.18, the cluster range extends from C₂ to E₄. This range, notated for one arm, can be reached by most adults or tall students. However, the composer noted in the score that if students cannot attain this cluster range due to shorter arms and smaller hands, they can silently press as many white keys as possible with the left arm without using the pedal until the end of the piece. Additionally, these students would have to open their hands to extend their fingers and reach as many keys as possible. This piece does not require using pedals. Therefore, teachers can easily introduce this piece to students who have upright pianos, allowing them to hear a mixture of resonating overtones. The challenge is that right-hand rhythms often have off-beat accents with various articulations. Playing different articulations makes it harder for students to play accents clearly. Thus, a student should first play the passage with only one articulation that is either legato or staccato and focus on playing the accents. Once they become comfortable, students can progress to playing the score as written, including the cluster.

**Early Advanced Repertoire**

All of George Crumb’s piano works since *Five Pieces for Piano* (1962) through *Makrokosmos Volumes I* and *II* and his most recent *Metamorphoses Books I* and *II* (2017-2020) achieve sympathetic vibrations by using either pedal I (damper pedal) or II (sostenuto pedal).

Most pieces are for advanced performers. Some pieces from *A Little Suite for Christmas* (1979) are suitable for early advanced students. “Nativity Dance” from *A Little Suite for Christmas* uses the sostenuto pedal to create sympathetic vibrations. This is the only piece limiting playing to the keys without inside piano techniques. This piece creates energetic and dramatic sounds. In the beginning, the performer silently depresses clusters and engages the dampers with the sostenuto pedal which remains depressed throughout the piece. The range of the cluster is an octave beginning on the lowest A (A₀) of the piano. Then, the piece begins with a dense, percussive, whole tone chord in a fast tempo.

**Practice recommendations.** It can be challenging for early advanced students to suddenly switch between contrasting thin and thick textures. In order to play this part effectively, the rests must be observed in their precise rhythmic value. After the loud clusters in measure 1, a sixteenth rest follows in measure 2. This rest assists in maintaining the pulse and allows time to prepare for the subsequent thin two-voice texture that follows. Measure 3 requires a thick whole-
tone cluster once again but the music quickly reverts back to a thin, two-voice texture in measure 4. In addition, this piece presents other challenging techniques for early advanced students such as: (1) consistently changing meter, (2) irregular rests, mm. 22-25 (Example 2.20), (3) suddenly shifting octave placements, and (4) thirty-second note triplets. Despite these difficulties, the harmonic and rhythmic repetitions make the piece not difficult to learn. To understand the rhythm, students can count sixteenth notes as representing one beat instead of eighth notes at the start of learning. This will help them better understand the thirty-second notes of a triplet. Once they fully understand the rhythm, they can then count the eighth note representing one beat, as originally indicated. Measures 22-25 introduce a complicated rhythmic motive in the left hand. It helps students clearly understand the rhythms if they play without the grace notes. To play a chromatic cluster in “Nativity Dance” on an upright piano students can use two thick books (about 7 1/2 inches long to cover just an octave) to create sympathetic vibrations (Example 2.21). When performers use books (bibles, hymnals, or dictionaries), the black keys are easily pressed all the way down, while the white keys may not be. However, this still creates a mixture of resonating overtones as the dampers are released from the strings.


Example 2.21. Sympathetic vibration using heavy objects
Chapter three discusses string piano techniques, which include creating pizzicatos, glissandos, harmonics, and muting of the strings. Cowell and Crumb were fascinated by playing directly on the strings with their fingers or hands. There has been no adoption of a universally agreed-upon notation and, as a result, different composers use different notation symbols. However, pieces generally include instructions that are easily understood. One benefit of learning inside-the-piano techniques is that students can become aware of the structure of the piano while creating special timbres or sounds. Henry Cowell and George Crumb each made significant contributions to string piano techniques. According to Potamkin, “Cowell experimented with the piano strings and identified 165 different kinds of tone qualities to be obtained from the “string piano.”\(^1\)

Cowell’s *Aeolian Harp* explores inside-the-piano techniques which require that the performer must stand to be able to reach the pedals, the keyboard, and the strings simultaneously. Cowell employs standard pitch notation with symbols to indicate two new techniques. Example 3.1 (mm. 1-5) illustrates one hand silently depressing chords while the other hand sweeps the strings of the piano. The sweep is indicated by the arpeggio symbol and “sw” with the arrow indicating the direction of the sweep. In mm. 6-7, “pizz” indicates the string is to be plucked by the left hand. “Inside” indicates that the notes are to be played the center of the string. “Outside” indicates that the notes are to be played outside the agraffes, near the tuning pins.

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Many pianists have never touched the insides of their pianos and hesitate to play on the strings. They may hesitate to tackle inside-the-piano repertoire because they feel that they do not know their way around the inside of the instrument, and think it is difficult to learn.\(^2\) There are two important things to know before attempting inside-the-piano techniques. First, pianists must understand the basic protocol for playing inside the piano (avoiding damage to the strings is addressed in chapter 5). Second, pianists must know the interior structure of the pianos that will be used for practice and performing. The keyboards of all modern pianos contain eighty-eight keys with the same groupings of white and black keys. Most grand pianos have three pedals—damper, sostenuto, and una corda. However, the insides of pianos vary from maker to maker and even from model to model.

For students to properly execute inside-the-piano techniques, the instructor must consider the physique of the pianist. It is easier for students who are tall and have long arms to reach the

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inside of the instrument while sitting down. One the other hand, students who are not tall enough will find it difficult to pluck strings while sitting down. Jean-Francois Proulx suggests that students “find a well-balanced standing position with the right foot on the pedal and the left foot posted somewhat backward while leaning the upper body slightly forward in order to gain visual and physical access to all the strings inside the piano.”

Several composers including Alan Hovhaness, Emma Lou Diemer, Seymour Bernstein, and Paul Cooper composed pieces for intermediate students that require inside-the-piano techniques. This paper focuses on these composers to demonstrate intermediate level techniques. Also, George Crumb’s *A Little Suite for Christmas* introduces both early-advanced and advanced students to various inside-the-piano techniques. Most pieces in *A Little Suite for Christmas* contain several of these techniques: “The Visitation” (clusters, harmonics, muting strings); “Berceuse for the Infant Jesu” (harmonics); “The Shepherd’s Noel” (pizzicatos, muting, string glissandos); “Adoration of Magi” (muting, harmonics, pizzicatos, clusters); “Nativity Dance” (sympathetic vibrations); “Canticle of the Holy Night” (sympathetic vibrations, pizzicatos, string glissandos); and “Carol of the Bells” (string glissandos, harmonics, clusters). It is challenging for both intermediate and advanced students to quickly alternate between plucking strings and playing on the keys. Therefore, teachers should choose pieces for intermediate students which avoid fast tempos, complicated rhythms, or rapid alternations between strings and keys.

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**Pizzicato**

A pizzicato is created by plucking a string inside the piano directly with a finger, very much like a guitarist, harpist, or string player. Plucking in the middle of a string produces mellow sounds, whereas plucking near the pins creates brighter sounds. Different sounds are also created by plucking with the fingernail or fingertip. For example, plucking with a fingernail creates a brighter and thinner tone color. Plucking with a fingertip brings a soft and harp-like sound. Performers also can use an object like a guitar pick (plectrum) to create pizzicato.

Playing pizzicato or other inside techniques often requires standing. Several pieces require performers to play on the keyboard while simultaneously reaching inside the piano. As previously mentioned, it may be challenging for shorter or young performers to play inside techniques because unlike taller players, they must reach farther into the piano, which necessitates alternating between standing and sitting.

**Notation of Pizzicato**

Cowell, Crumb, and Bolcom, like many other composers, use a short abbreviation for pizzicato, “pizz,” which indicates a string is to be plucked. Hovhaness, however, does not use any special indication for pizzicato but writes “*

**Intermediate Repertoire**

“Midnight Bell” from *Visionary Landscapes* (1967) by Alan Hovhaness offers an excellent opportunity for late intermediate students to learn pizzicato inside the piano. “Midnight Bell” must be played entirely on the strings with the fingertips. The damper pedal is held throughout the piece, the range of melodic lines is not wide, and the rhythms are very simple.
**Practice recommendations.** Pianists can play on either a grand or upright piano. “Midnight Bell” is difficult to play without marking the strings and dampers as described at the end of this chapter. Therefore, performers must mark the strings and dampers to locate the strings quickly.

To play pizzicato, the student must maintain a well-balanced standing position while pressing the right foot on the pedal. It is important that the student be able to use any finger to pluck the desired string firmly with relaxed arms and wrists and release it immediately in the same motion to let it vibrate as naturally as possible. Even though the meter alternates between 5/4 and 4/4, the quarter-note pulse remains consistent, allowing students to play the rhythms without much difficulty.


Samuel Adler composed excellent contemporary music for students and also wrote about the importance of introducing and teaching contemporary music to students. In his book, *Gradus: 40 Studies for Piano Book II*, he writes “The co-existence of many diverse styles and techniques is one of the significant characteristics of twentieth-century musical composition … The aim of these books is not to bring about the acceptance or rejection of any system, but rather to widen musical acquaintance and to stimulate the wish to consider more deeply a style, a notation system, or a musical philosophy.”

Gradus I and II contain a diverse collection of non-

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traditional notation and techniques including graphic notation, aleatoric music, inside-the-piano techniques, and clusters. In 1979, Adler composed *Gradus III: Twenty Further Studies in Contemporary Techniques for Piano*. The composer provides explanatory notes for each short piece that describe the pedagogical elements and offers suggestions for playing.

*Gradus Book II, No. 17* is the only piece in the set that includes inside techniques, both pizzicatos and string glissandos. *Gradus Book II, No. 17* (Example 3.3) has two different themes. The first appears in mm. 1-5 as a canonic imitation. The left hand plays the melody on the keyboard while the same melody is plucked on the strings using the right hand. The second theme, mm. 6-11, begins with the left hand plucking low strings while the right-hand responds with arpeggio figures. The theme ends with string glissandos in contrary motion.

**Practice recommendations.** This piece uses an alternate notational system that might make it more difficult to find the correct pitch. The symbol “X” represents plucked strings. The traditional notehead specifies the precise pitch. The symbols ▽ or ◇ indicate strings to be plucked in the lowest range possible depending on how far one can reach. Meanwhile, the inverted symbols ▲ or ◆ indicate strings to be plucked in the highest register possible. The black or white color of the triangle refers only to its rhythmic value. In mm. 1-4, the left hand plays the melodic lines on the keys, while the right hand plucks strings of the corresponding notes. As the left hand plays the keys, the hammers hit the strings, allowing the performer to “mark” the strings of the same keys with their eyes. The challenge begins after this when the plucked and played strings are different. In measure 5, the right hand plucks notes D₆ and B₅ while the left hand plays the keys of different notes B₅, D₇, and B₆, simultaneously. In response to this challenge, I suggest that performer marks the strings using dot-labels to locate them.

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easily. For example, the beginning notes of the two-handed glissando in measure 11 should be marked on the strings. The right hand begins on Ab₅ and the left hand begins on G₅.


**Early Advanced Repertoire**

Crumb’s “The Shepherds’ Noël” is representative of early advanced repertoire (Example 3.4). Crumb explained in his performance notes that there are different techniques to achieve different kinds of pizzicato: (1) The string is plucked with the fingertip towards the center of the string indicated “*pizz (f.t)*” (2) The string is plucked with the fingernail near the bridge, indicated “*pizz (f.n)*.” There are two places to play pizzicato inside the piano (C#₆ and F₆). In m. 2 (Example 3.4), the performer plucks the strings using the fingertip and plays glissando over the strings within a specific range of strings.

The form consists of three sections (A, B, and a codetta). In the section, in addition to playing on the keys, the left hand also plays rapid pizzicatos and glissandos on the strings (mm. 1-6). The B section is played only on the keys and contains a canon (mm. 7-12); here, it is
challenging for one hand to play eighth-note triplets while the other plays eighth-note duplets—both hands also play several grace notes. The rhythm of section A returns as a codetta to end the piece (mm. 13-15). The codetta repeats the rhythm of the A section and adds muted tones as well.

**Practice suggestions.** Using a metronome at a slow tempo, students can first attempt the canon of the B section, omitting the grace notes to better understand the complex rhythms and maintain a steady tempo despite the different rhythms. Crumb’s metronome marking is 54 quarter notes per minute. Performers must be able to find the position of the strings quickly since the performer plays between the keys and the strings alternately. Also, there is a specific range for playing glissandos on the strings, so the performer can easily identify the range by marking the beginning string (Bb3) and ending string (A4). In m. 13 (Example 3.5), the performer plucks F6, a note already sounding, using the fingernail while muting the same string (m. 14) by applying a finger. The performer continues muting the strings while playing on the keys. By marking the appropriate strings, the performer can easily find inside-the-piano pitches as indicated by the score.


**Muting or Damping**

A performer can mute a string to modify its timbre by placing one hand near the pins and playing the corresponding pitches on the keyboard with the fingertip of the other hand. Muting produces very different sound effects depending on the location of the dampening finger or hand and how much force is applied to the strings. Muting produces less sustained sounds and darker tones than corresponding unmuted tones. If more force is applied to the piano string, the effect is not a vibration but instead a percussive sound. The performer can mute a single note or groups of notes by using the fingertips for a single note or a few notes, or by placing the entire hand on the strings. The performer can easily mute the range of a fifth, and possibly more depending on the size of the performer’s hand. In addition, the player can dampen the string(s) with the fingers or the hand immediately after depressing the keyboard’s corresponding keys.

If muting involves a wide range of notes, the performer can place objects such as a window squeegee on the strings. Holding the handle of a squeegee while pressing firmly on the strings creates a very bright percussive sound. It also produces different sounds depending on the squeegee’s placement on the strings as well as the amount of pressure applied.
A window squeegee can be used as a mute for a wide range of strings

**Notation of Muting**

Muting notation is generally indicated by a “+” sign above or under the notehead with a “mute strings” explanation. However, some composers use “+” differently. Cowell uses the “+” mark for smaller fist clusters in *Tiger*. Also, Adler uses “+” above the notes for plucking the strings in his *Bells and Harps*. However, most composers commonly use the “+” as a muting sign.

**Intermediate Repertoire**

Paul Cooper (1926-1996) composed twelve short pieces, *Cycles for Piano*, in 1969, which are appropriate for intermediate students. This set explores extended piano techniques including clusters, sympathetic vibrations, and string piano techniques. *Cycles for Piano No. II* includes muting. This piece lacks a time signature, measure lines, and stems on the muted notes. The performer must play specific notes but can freely choose rhythms.

**Practice recommendations.** Cooper noted that the performer must press down diamond-shaped noteheads silently (B₃ and C♯₄), then dampen with the left hand inside the piano as indicated in
the beginning of the piece in a small rectangular box (Example 3.6). The piece can be played on either upright pianos or grand pianos. Particularly when playing on an upright piano, students can try pressing different locations of the strings of these two notes. Pressing the strings near the hammers creates only a percussive sound. Playing near the pins produces a fundamental pitch, rich with overtones. There is no indication or explanation of where to press the strings, so the performer can freely choose the location on the strings.

The performer plays black noteheads without stems freely with the right hand. Since this piece is unmeasured and lacking note stems, the performer can phrase with different groupings. The appearance of the score suggests that notes that are closer together should be played a bit shorter in length, and when farther apart, played longer. The composer notes that the quarter notes are to be played quite rapidly (at about 120 beats per minute [bpm]). Half notes are to be played slower but freely with a tempo of 60 bpm.


“A Harp in the Sky” from *Adventures in Sound for Piano* by Emma Lou Diemer requires the performer to dampen the strings. There is no specific note indicated in the rectangular bars. Diemer instructs the performer to dampen the right-hand notes by using horizontal rectangular bars. For instance, in mm.1-4 (Example 3.7), the right hand plays the diamond noteheads E₃, F₃, and Ab₃ on the keys, while dampening the corresponding strings. In measures 15-16 (Example
Diemer indicates with horizontal bars, that the performer must dampen the C$_2$ string while playing the C$_2$ key with the right hand. Diemer uses diamond-shaped noteheads throughout her works as an indication of altered sound.


**Early Advanced Repertoire**

Crumb uses various inside-the-piano techniques including muting, pizzicato, striking, and harmonics in “Adoration of the Magi” from *A Little Suite for Christmas*. This piece lacks a time signature and bar lines. There are three sections, each with indicated tempo markings. Even though the tempo of the sixteenth note is 120 bpm, it is not actually fast because the basic pulse of the note is the sixteenth note. Crumb often uses extremely contrasting dynamics (*pppp*-*ff*). The performer must hold down pedal I (damper pedal) from the beginning to the end. Pedal III (una corda) is sometimes used. A left-hand cluster indicates which strings are to be muted. Crumb
instructs the performer to mute this group of strings by using the edge of the hand. The melodic line is built on the black-note pentatonic scale. The melody consists of three groups, each beginning with the same notes (Ab₄/Bb₄/Eb₄). After each group, four sixteenth rests appear. The second group contains an extended melody from the first group, and the last group has a shorter version. Even though each group has a similar melody, the dynamics are different \((p, f, pp)\).

**Practice recommendations.** A performer whose hands are too small to cover the strings can use a squeegee. A squeegee is an effective muting tool, producing a clearer and brighter tone color than using the hands. Another advantage of using a squeegee is being able to mute all tones evenly over a relatively large range. Squeegees come in different sizes, but it is better to use a size that is just large enough to cover the necessary range. A large-size squeegee is less convenient to use than a small one because the rubber is too hard and requires a lot of force to create a sound.

**Glissando**

Glissandos are another piano technique achieved either inside the piano or directly on the keys. String glissandos imitate the sound of the harp and are simple chromatic sweeps across a range of strings. Strumming inside the piano, pianists can use their fingertips, fingernails, or other devices while depressing the damper pedal. This creates various sounds depending on the location of the strings or method of playing (fingernails, fingertips, or mechanical devices).

According to Shockley, “using the fingernails or a guitar pick produces a brighter sound with a more metallic and distinct onset of the sound… A pianissimo, low-register glissando across the strings may allow the piano to do double duty as an unpitched percussion instrument. A fortissimo middle-register glissando with fingernails produces a much brighter sound.”

Composers use different ranges and notations of specificity for glissandos. Some indicate the approximate range of a glissando, whereas others indicate a specific range of notes. Before learning various glissandos, students should first practice a small range of glissandos and expand to larger glissandos. In Cowell’s *Aeolian Harp*, the indicated notes are silently depressed by the left hand on the keyboard, while the interior strings are swept with the right hand. George Crumb adopted Cowell’s string glissando techniques from *Aeolian Harp* and used them in “Music of Shadows” (*For Aeolian Harp*) (*Makrokosmos, Volume I*) and “Twin Suns” (*Makrokosmos, Volume II*). To create resonating overtones, Crumb places the silently depressed notes on a staff within boxes and indicates the register for the fingertip glissando, covering the range of strings within the boxes.

Performers can play string glissandos using not only their fingertips or fingernails but also objects such as guitar picks, brushes, pens, and marimba sticks, etc. to create different

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colors. Achieving different dynamics depends on the plectra. *Fantasy for Piano, Op. 16* (1952) by Alan Hovhaness contains a glissando created by material objects (Example 3.10). The pianist must play the bass notes inside the piano, directly on the strings, using marimba sticks.


**Notation of Glissando**

Most notations of string glissandos use a diagonal line on the staff to indicate the beginning and ending notes or range. Symbols appear also as wavy lines from the lowest to the highest pitch with “gliss (on the strings).” Composers indicate string glissandos “on the strings” to distinguish them from those on the keys.

Intermediate Repertoire

Cooper’s *Cycles for Piano IX* (Example 3.12) contains two extended techniques: sympathetic vibrations and string glissandos. To create sympathetic vibrations, Cooper has the LH silently depress three keys in the bass clef (E₃, F♯₃, A₃) and four keys with the RH (B₃, C♯₄, G♯₄, and A♯₄) in the treble clef, then securing them with the middle pedal. The diamond note heads in the box just to the right of the treble and bass clef signs represent the held keys.

**Practice recommendations.** These seven notes are produced sympathetically when the RH makes a glissando indicated by a diagonal line in the score extending from E₃ in the bass clef to A♯₄ in the treble clef. In addition, Cooper requests a different type of glissando, one that uses the eraser end of a regular pencil. It is recommended that the performer stand and play. Because the performer must play a glissando lightly with a pencil eraser, the performer needs to relax the right hand and wrist when strumming, while playing the melodic line with the left hand.

Early Advanced Repertoire

“Canticle of the Holy Night” from *A Little Suite for Christmas* explores string glissandos in a sophisticated and fresh approach. This piece includes various timbral effects such as pizzicato, string glissando, and silently depressed keys while holding the sostenuto pedal throughout the entire piece. Crumb places the silently depressed notes on the staff within boxes and indicates the register for the glissando on the strings, with each rapid glissando performed by the fingertip. One of Crumb’s compositional techniques is using musical quotations, and, in this work, he uses a quotation from the *English Coventry Carol* (1591) (Example 3.13). This quotation occurs in mm. 5-10 with the RH first plucking the pizzicato in the bass line, then strumming the chord and melody as a string glissando in the treble clef (the LH is silently depressing these melodic notes in the treble clef). Playing a glissando after a pizzicato, which has been sustained with the sostenuto pedal, creates a beautiful sound.

**Practice recommendations.** Crumb did not indicate which hand should be used to pluck the strings in mm. 1-4. However, a performer should use the left hand to pluck the strings because the melodic lines occur in the high register of the piano, which is easier to play with the right hand. From mm. 5-10, however, Crumb specifically indicates that the string techniques are to be performed using the right hand. Here, the performer should use different colored dot labels on the strings to differentiate the notes played by the left hand and right hand.

Measures 5-10 quotes the “Coventry Carol,” as the performer silently depresses keys using the left hand while the right hand plays the inside of the piano. There are some challenges here. First, it is not easy to play the harmonies on the keyboard without making a sound. Therefore, it is important to practice this part using only the left hand but without looking. This allows the performer to always look at the strings to eventually navigate the right-hand
movements inside the piano. Once the performer masters this left-hand practice, they can then add the right-hand pizzicatos and glissandos. Second, it is often difficult to play different techniques with the left and right hand at the same time. In response to this challenge, it is suggested that the performer play from memory.

In addition, the right hand plucks a bass line on the strings and immediately follow this with sweeping glissandos revealing the harmony and melody. There is no specific range indicated for the glissandos and the performer must be certain to sweep across all strings vibrating because of the keys held silently by the left hand. It is challenging to play various inside techniques while also playing on the keyboard and changing the pedal to clearly define the harmonies. The performer must practice moving immediately from the plucked bass line to the glissandos in one motion while observing the precisely indicated pedal changes.

Harmonics

A harmonic is achieved by lightly touching a certain place on the string while the other hand plays the corresponding key, producing a specific overtone. Each string has several nodes that produce different partials. This chapter discusses only the second and fifth partials. Harmonic is a shortening of harmonic partial, and both of these terms refer to partials with whole-number ratios with the fundamental.

Location of Second and Fifth Partial

The second partial produces a sound one octave above the fundamental pitch; to create a second partial harmonic, the player touches the exact center of the string’s speaking length, between the agraffes and the bridge pin (Example 3.14). In order to find this node, the pianist will have to slowly slide a finger on the string set back and forth while constantly repeating the related key. Especially when playing harmonics, a performer can have difficulty playing them unless they mark the strings. Therefore, it is important to mark the strings to find them more easily.

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Example 3.14. Location of agraffes and bridge pins.

The fifth partial node is located near the dampers. Creating it relies on the same concepts as for the second partial, but here, instead of dividing the string into two equal parts, the string is divided into five equal parts. The fifth partial produces a sound of two octaves and a major third above the fundamental. In his performance notes to *A Little Suite for Christmas*, Crumb states that the harmonics within bracket “A” are the fifth partial [the node located near the dampers]; within bracket “B,” the second partial [the node located at the exact center of the string] (Example. 3.15).\(^8\)

\[\text{Example 3.15:} \text{the harmonics within bracket “A” are the 5th partial; with bracket “B,” the second partial. Crumb, from *A Little Suite for Christmas, A.D. 1979* (New York: C. F. Peters Co., 1980).}\]

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Notation of Harmonics

A common notation for a harmonic is a small “o” above the notehead. Generally, composers add words under or above the harmonic symbols. For example, Crumb adds the text “touch nodes for 5th part. harm.” (Example 3.16). Adler uses the word “depress harmonic.”

Example. 3.16. Crumb’s Harmonic notation

Marking of Nodes

Creating harmonics quickly can be difficult unless the correct location on the strings has been previously marked. As mentioned earlier, the second partial node is at the center of the string. Therefore, this location will vary depending on the length of the string. The performer can choose marking materials such as chalk, sewing thread, or painter’s tape. Shockley suggests marking with poster putty, thin strips of painter’s tape, or knotted loops of colored thread. Using chalk to mark the strings is the most convenient method although it has the disadvantage of being easily erased and results in chalk dust on the soundboard. Accordingly, technicians and owners of pianos are generally reluctant to performers using chalk in their pianos. Instead, Shockley recommends painter’s tape, which adheres without leaving any residue.

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9 Ibid., 97.
Intermediate Repertoire

Adler’s “Bells and Harps” from Gradus III (Example 3.17) offers an excellent way for a piano teacher to introduce different inside techniques to the intermediate student. Its initial five measures utilize plucking (pizzicato), and there is a glissando in mm. 20-21. After the glissandi in the left hand and plucking the strings in the right, the right hand depresses the “middle C” string in its middle while the left-hand strikes the corresponding key to produce second partial harmonics sounding an octave higher.


“Bells and Harps” is performed both inside the piano and on the keyboard. Playing this piece benefits student because it requires three different extended techniques: glissandos, pizzicatos, and muting. A harp is simulated by playing a glissando, pizzicato and muting produce beautiful and resonant sounds imitating bells.

Practice recommendations. This piece has three staves and uses various symbols for the string techniques. A “+” sign over a note indicates plucked strings. The keys indicated by the diamond-shaped note heads are depressed silently with the left hand. Also, a string glissando is indicated by a line connecting two diamond-shaped notes. In mm. 1-4 (Example 3.18), the performer plays G5 on the keyboard and plucks the same note on the string. It is easy to identify which strings to pluck because the performer can see the rising dampers. The performer then strums the strings in
the bass clef while the damper pedal is depressed, but following the strumming in the treble clef, the pedal will have to be released and quickly reapplied so that the D major triad sounds. Immediately after that, the two hands alternate between playing notes on the keyboard and plucking strings. A glissando is created by using the fingertips to strum across the strings inside the piano. In m. 3 of Example 3.18, the range of the glissando is indicated and it is played $p$. This piece requires the player to often switch between playing the keyboard and playing the strings with various techniques. Therefore, the performer must stand. To mute a string, the performer presses the strings lightly with the fingertips.


**Early Advanced Repertoire**

Crumb’s harmonic techniques require playing mostly the second and fifth partial harmonics. Several pieces such as “The Visitation” (fifth partial nodes), “Berceuse for the Infant Jesu” (fifth partial nodes), “Adoration of the Magi” (second partial), and “Carol of the Bells” (fifth partial) from *A Little Suite for Christmas* employ harmonics.

Crumb’s “Berceuse for the Infant Jesu” (Example 3.19) is only nine measures long and a good piece for introducing students to the fifth partial harmonic technique. Its program notes describe this music as a traditional cradle song—a gently rocking rhythm accompanying a
lullaby-like melody.\textsuperscript{10} The piece begins with a gentle ostinato in the left hand with an extremely soft dynamic \textit{ppp}. Both the ostinato and melody use pentatonic scales. A white-key pentatonic scale is played in the left hand and a black-key pentatonic scale, in the right hand.

The lower-pitched strings produce a louder and more intense vibration, thereby creating a beautiful large bell sound.

The longer the vibrating string length, the louder the harmonic, so harmonics ring better on bass strings than on tenor or treble strings, and they are louder on the longer bass strings of concert grand pianos than on the much softer bass strings of baby grands and upright pianos….the lower a particular overtone is in the harmonic series, the louder and easier that overtone is to produce, again mostly because a lower overtone means a greater vibrating length of that particular string.\textsuperscript{11}

\textbf{Practice recommendations.} The pattern of this piece is as follows: the melody is played on the keys for the first two measures; the third measure consists of touching the nodes for the fifth partial harmonics (D#\textsubscript{1} and F#\textsubscript{1}); this 3-bar pattern is repeated twice, completing the nine measures of this piece. In measure 2, a ritardando occurs before the performer plays the harmonics, allowing adequate preparation time. Performers should mark the strings in order to find the correct string location. As mentioned earlier (Example 3.15), Crumb indicates that the notes within bracket “A” are the fifth partial harmonics which can be found near the dampers. In order to produce a very soft and calm bell sound, the player must gently press the string. Also, the performer should remove the hands very slowly to sustain the sound.


\textsuperscript{11} Shockley, \textit{The Contemporary Piano}, 94.
Score Placement

If not playing from memory, performers playing inside techniques can read from an iPad or sheet music. Playing on an iPad is effective and offers many convenient features. As shown in Example 3.20 below, if an iPad stand for the piano is used, the music can be read vertically allowing the performer to see the score easier, but this makes it more difficult to reach the strings compared to laying the sheet music flat on the pins.

Example 3.20. iPad for sheet music.
The performer can place sheet music on the pins when playing inside-the-piano techniques. Also, the music rack can be placed behind the dampers to allow easier access to the strings (Example 3.21). If the score is quite large, such as *A Little Suite for Christmas*, it is difficult to see the small notes in an electronic version score, so it is better to use a paper score. The player may also place sheet music directly on the pins or on the struts.

Example 3.21. Music rack placed behind the dampers and on the struts.
Marking Inside the Piano

It is difficult to play inside the piano without making temporary marks. To find notes quickly, it is necessary to mark on strings, dampers, bridges, string ends, or felt surfaces. Players do not have to mark all the strings and dampers. It may be necessary to mark only a few to be plucked or muted. As mentioned above, strings and dampers can be easily damaged. Performers can use Blu-Tack, post-it strips, or dot labels on the strings and dampers to protect them. Shockley made the following suggestions about marking inside the piano: On the dampers: Use Post-It strips or small self-adhesive dot labels or use a small dot of Blu-Tack. Use great care with pressing on or moving the dampers. On the strings: Use a small dot of Blu-Tack to mark nodes, or loop closely around the string a thin strip cut from the adhesive section of a Post-it notes and stick it to itself.\(^\text{12}\)

\(^{12}\) Shockley, *The Contemporary Piano*, 64.
CHAPTER 4
AUXILIARY SOUNDS

Auxiliary sounds are those that the performer produces via various percussive effects on the piano or by vocalization. Most percussive techniques are performed on the wood or plate sections of the piano. Students may be unfamiliar with this way of performing, but they can learn and play by experimenting. It also introduces the audience to listening to non-traditional ways of playing. The performer can use the fingers, hands, or objects to hit, clap, and tap the piano’s inside and outside surfaces. Inside structures include the piano’s structural braces, plate, and soundboard. Striking these different parts can produce different sounds. On many instruments, depressing the damper pedal and then hitting these braces produces a clearly pitched tone, a different one for each brace, causing the piano’s strings to vibrate.1 Striking the soundboard can produce percussive sounds. The performer can also hit the outside surfaces including the fallboard, music desk, key blocks, underside of the keyboard, the sides of the piano, and the top or underside of the lid. Most percussive sounds are notated in the score with an “x” without any pitches indicated.

Vocalization techniques include singing, shouting, whistling, whispering, and moaning. The purpose of vocal techniques is to enhance the atmosphere of a passage or to add verbal meaning to the music.2 Since it may be uncomfortable for some pianists to perform vocal techniques, these performers should practice these techniques separately or learn them from a professional vocal coach. The performer should practice the vocal techniques separately in order to bring out the characteristics of the piece. Speaking techniques are often performed

1 Ibid., 110.
simultaneously with piano performance, so it is important to convey the meaning of the words by enunciating them clearly.

While playing the piano, it can be more difficult to sing, whistle, or hum a specific note or melody than to speak or shout. Although it is not easy to whistle a specific pitch, David Burge states that any pianist can develop the requisite whistling ability with practice. In _Makrokosmos Volume I_, “Night-Spell I,” the performer must whistle a quotation of “Will There Be Any Stars In My Crown?” an octave higher than what is being played (Example 4.1). There are several of Crumb’s pieces that ask the performer to sing and shout. For example, Crumb’s _Makrokosmos Volume II_, “Tora! Tora! Tora!” asks the pianist to shout the words “Tora! Tora! Tora!” very loudly at the end to create great tension (Example 4.2). “Agnus Dei” requires the pianist to sing the melody by legato whispering. In Bolcom’s “The Serpent’s Kiss,” the performer must whistle in the coda section after playing a surprising cluster on the low keys (Example 4.3).


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**Intermediate Repertoire**

Bernstein’s “Roadrunner” from *Birds 2* is a short character piece and a good way to introduce auxiliary sounds to intermediate students. The cartoon character, “Roadrunner,” inspired this piece.\(^4\) The expression of the music is indicated in the score as “deadpan.”

**Practice recommendation.** The composer recommends playing the notes evenly, dryly, and without expression. In mm. 5-10, rapid sixteenth notes appear in various octave placements, and it can be challenging to locate and play them evenly. Therefore, instead of playing the scalar patterns as written, one should “block” the various hand shifts, always grouping those keys.

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together that can be played in one hand position. This will reinforce accuracy and aid in playing the gestures evenly. Staggered rhythmic practice will ensure evenness as well. For example, although the sixteenth notes are beamed in groups of four, the performer should practice holding the first one longer, then playing the remaining three quickly. The process should be repeated holding the second sixteenth longer, then the third, and finally the fourth. The three notes of the cluster (F₄/F♯₄/G₄) describe the sound “Beep! Beep!” in a rhythm of two eighth notes. Using the knuckles, the performer taps on the wood of the piano with knuckles in mm. 16-18 producing a percussive sound. Playing clusters on the keyboard and immediately tapping on wood with the right hand is not easy. It is best to tap on the wood closest to the right hand after playing the cluster. Then the rhythm and tempo can be evenly played.

Seymour Bernstein’s “The Black Fly” from Insects Book 2 is a humorous piece using auxiliary sounds including hand clapping, leg slapping, slapping the back of the neck, slapping the wood above the piano lid, and slapping the right and left wrists.

**Practice recommendations.** There are no bar lines in this piece (Example 4.5). The performer can play freely, but it is recommended that the rhythm be very steady because the composer writes “dry, in strict rhythm.” It is difficult to quickly make a succession of auxiliary sounds
using different parts of the piano (slap wood above piano lid) and the performer’s body (clap hands, slap back of neck with right hand, slap right leg with right hand, slap left thigh with left hand, slap left wrist and right wrist). Therefore, it is helpful to maintain the beat by making the clapping or tapping movements of the hands as small as possible. All auxiliary sounds are indicated as an “x” replacing the notehead. Since playing in various octaves immediately after tapping or clapping can be difficult for intermediate players, it helps to practice only the measures that combine keyboard playing with tapping. The repetition in the “The Black Fly” allows students to enjoy playing this piece.

Emma Lou Diemer’s “Old Spanish Town” from *Adventures in Sound for Piano* offers a good rhythmic study alternating between tapping and playing eighth-note patterns on the keyboard.

**Practice recommendations.** This piece begins with tapping on the bottom edge of the music rack with flat fingers and alternates playing the melody on the keys. There are four measures of
tapping an identical pattern (mm. 1-4, 9-12, 17-20) followed by four measures of playing on the keyboard (mm. 5-8, 13-16, 21-24). Students must learn to tap the eighth note subdivision beats accurately and steadily. Students often tend to lose their pulse when moving from the music rack to the piano keyboard. After tapping on the music rack from mm. 1-4, students often mistakenly change the tempo in m. 5 when they transition back to the keyboard. Therefore, in order to maintain the same tempo during this transition, performers can first practice with a metronome to keep the tempo steady and only tap the rhythms from mm. 1-8 without playing the melodic lines. After students feel comfortable with this method of practice, they can play the melodic lines as written. Then they should be able to play evenly at the same tempo. While tapping, the player must hold down the damper pedal, creating greater resonance. Technical difficulties in this piece include right-hand accents on weak beats, frequent ties, and different articulations between the hands. In order to understand the accents and execute the ties, the performer should first practice legato. After that, the right hand can play staccato as indicated in the score.
Example 4.7. Diemer “Old Spanish Town,” mm. 15-34.
Early Advanced Repertoire

William Bolcom composed “Knockout: A Rag” in 2008 (Example 4.8). It includes the percussive elements of knocking or tapping sounds. This piece consists of three themes; the first and second themes each have repeat signs. The structure of the piece is as follows: Introduction (mm. 1-4), A Section (mm. 5-21), B Section (mm. 22-38), C Section or Trio (mm. 39-54), C1 (mm. 55-68), Transition (mm. 69-72), A Section (mm. 5-21), B Section (mm. 22-35), and Coda (mm. 73-84). This piece begins with knocking on the piano fallboard in mm. 1-4. The performer must demarcate the notes clearly and steadily. The sixteenth notes and rests make the rhythm livelier.

Practice recommendations. This piece presents technical difficulties in alternating the hands to play on either the keyboard or the fallboard. The player should play the beat evenly without slowing down. To accomplish this, the performer should first practice at a very slow tempo. A new theme is introduced in m. 22 (example 4.9). Unlike the A section, which was initially played staccato, the second theme’s melody begins legato. The composer indicates “more connected, but still spiky.”

The musical material in mm. 22-38 presents various technical difficulties. First, a rich harmony in the right hand with accents on both the strong and weak beats can be difficult to play in rhythm. Second, the rhythmic tapping becomes more complicated. The composer keeps the style lively using thirty-second notes and rests. This dotted rhythm can be challenging for the performer. To practice, the performer can subdivide the rhythm in a slow tempo. Third, although marked with an arpeggio symbol, it can be difficult to play the broken intervals of a tenth in the left hand as in mm. 30-33 (Example 4.10). Therefore, it is recommended that the performer emphasizes the bass notes. Using the damper pedal can easily create a smooth, connected
impression in this section. In the trio section (Example 4.11), the key changes to G flat major with dotted rhythms and triplets, which are divided between playing and tapping.


Example 4.10. Bolcom, “Knockout: A Rag,” mm. 31-34.

*Battle of Manassas* by Thomas “Blind Tom” Wiggins includes vocalization (or using objects). It requires whistles and other sound effects depicting trains (Example 4.12). The composer originally made these sounds with his mouth when performing the piece. Some performers also use a reed pan flute which mimics the sound of trains.

**Practice recommendations.** In this piece players can choose to either vocalize or play instruments. To inform their choices, performers can listen to CDs or view YouTube performances vocalizing these parts or using instruments in addition to the piano. Jeannette Fang can be seen on YouTube playing the piano in a beautiful performance assisted by Jean Bernard

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Cerin performing the vocalization parts on the reed pan flute.⁶ On the other hand, John Davis whistles the “chu chu” vocalization part.⁷


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CHAPTER 5
PRECAUTIONS

Avoiding Damage to the Piano

Inside piano techniques can damage a piano. Students must appreciate how delicate the strings are and must know how to prevent damaging them when playing “string piano.” When we perform clusters and sympathetic vibrations, this is very unlikely to damage a grand piano. But the inside of the piano is quite different. Therefore, performers must understand and prepare before touching the strings. The strings of the piano are sensitive to the oil or sebum present on human skin. Oil remaining on a string causes it to rust.¹ Students must thoroughly wash and dry their hands before touching the strings. Shockley recommends that “pianists must wipe down the hard surfaces that you have touched during the performance with a clean, dry cloth to remove any transferred oils or moisture.”² If a performer practices inside-the-piano techniques for an extended time, the player’s hands may sweat and damage the strings. The best practice is to follow Shockley’s advice to use inexpensive, one-size cotton gloves (Example 5.1). Doing so can protect the strings without altering the sound.

¹ Shockley, The Contemporary Piano, 56.
² Shockley, 50.
Example 5.1. One-size cotton gloves

It is best to remind students that even with normal playing, pedals are fragile and can be harmed if pressed too hard. Proulx says that “to avoid damaging the pedals, pianists can insert a cushion under the pedals when they practice.” Finally, we must remember to continually

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remove dust from the soundboard. You may use a small vacuum to remove dust from the inside of the piano.
Extended Techniques for the Upright Piano

Pianists can perform unconventional techniques on the keyboard of an upright piano, but string techniques are very limited. String piano techniques such as pizzicato, plucking, muting, and glissando are composed mostly for grand piano. However, with restrictions, there are some pieces that can be played on the upright piano. The size of the upright determines the plucked and strummed possibilities. These may be carried out only near the pins as the hammers are directly beneath that. There are various sizes of upright pianos, but four different sizes are commonly used: upright height 50”-60”, studio height 45”-49”, console height 40”-44”, and spinet height 36”-39”. The smaller instruments such as the console and spinet are more limited in allowing string techniques. First, the front cover and the upper front board can be removed with the music score placed on top of the piano to play the inside techniques. Unlike grand pianos, upright pianos have a curtain of felt between the hammers and the strings. This should also be removed. An upright piano’s pedals are different from those on a grand piano. Most upright pianos do not have a sostenuto pedal. It is hard to play sympathetic vibrations. If there is no sostenuto, the performer can place a heavy book on the keys as either a black or white key cluster creating vibrations. Sometimes, an assistant is needed to keep the book from falling off the keys.
CHAPTER 6

CONCLUSIONS

As a pianist and teacher, I have not seen many extended-technique performances. This music has had a great influence on my interest in new music. I hope this dissertation will be helpful for teachers and students who are unfamiliar with extended piano techniques and will motivate them to discover these techniques and find stimulating repertoire to study (see Appendix). This dissertation makes the contribution of drawing on my personal experience teaching extended piano techniques and matching students’ skills with appropriate piano literature.

The intermediate-level pieces selected for this paper are no longer than two or three pages. Learning these at first can seem overwhelming in their frequent use of accidentals and a wide range of clusters. However, there are many rhythmic and harmonic repetitions, so students can easily learn them. As a result of my teaching and through my familiarity with this genre, the repertoire selected here should be comfortable for students to approach without apprehension or misunderstanding. The teacher’s choice of pieces should encourage students to think inquisitively about playing unconventional music. Accordingly, the teacher can show the score to the students and gauge their reactions, positive or negative. In modern times, much music can be easily heard, seen, and played through media. Teachers can also listen and compare the performances of various performers with their students. This enables teachers to identify the interest and passion of students to learn extended techniques. For early advanced students wanting to play extended techniques for the first time, I have recommended appropriate repertoire. For example, Crumb’s A Little Suite for Christmas is the first extended piano technique piece I learned, understood, and played. Initially, I had some difficulty understanding
the inside techniques, but after pondering them, found no difficulty in playing this work or other repertoire. As a teacher, I learned how to consider many different perspectives when selecting pieces for students. This approach also stimulates teachers to explore literature beyond that which they have already played, taught, or are familiar with.

The diversity of the teacher's repertoire to include new pieces and techniques not only helps students understand repertoire extending beyond the western classical tradition, but also encourages students to approach new ideas. When I first encountered the scores of piano pieces with extended techniques, I thought that the complicated-looking score, unknown symbols, and many accidentals seemed like music from a different world. After understanding these symbols, I was able to comprehend the language of various composers and gained the confidence to play the pieces.

Instructors can introduce non-traditional music in order to develop students’ musical intelligence as well as the rhythmic and technical aspects of piano playing. Frank Potamkin recommends that contemporary music be introduced as soon as the pupil is capable of successfully playing the very simplest of contemporary compositions.¹ With this early introduction to non-traditional techniques, the student will confidently progress as the pieces become more complicated in their nontraditional languages. It is difficult to find pieces including inside-the-piano techniques in the general piano repertoire used by students. It would be helpful for composers to continue writing compositions with extended techniques and have them widely available whether through themselves or publishers. This would greatly aid in introducing students to new capabilities of the piano.

A piano student must understand the structure and workings of the piano mechanics—how strings, dampers, and hammer’s function. Playing extended techniques offers students the best introduction to explore the inner workings of the piano. The acquisition of basic extended technique skills should constitute part of the musical education for all piano students, helping to develop their sensitivity for color, sound, and balance in the pursuit of musical fulfillment.
APPENDIX A

Appendix A lists suggested works arranged in the order of the chapters and includes a level for each piece, Alphabetical. The methods are abbreviated as follows:

LI- Late Intermediate Level
EA- Early Advanced Level

CLUSTERS

Adler, Samuel
THE SENSE OF TOUCH
   No. VIII (LI)

Chatman, Stephen
AMUSEMENTS, BOOK 2
   Freak Out (LI)

Bernstein, Seymour
BIRDS, BOOK 2
   The Guinea Hen (LI)

Cowell, Henry
DYNAMIC MOTION
   Amiable Conversation (EA)

Finney, Ross Lee
32 PIANO GAMES
   Arapaho (LI)

Harrison, Lou
   The Reel (EA)

Wiggins, Thomas
   Battle of Manassas (EA)

SYMPATHETIC VIBRATIONS

Crumb, George
A LITTLE SUITE FOR CHRISTMAS
   Nativity Dance (EA)

Diemer, Emma Lou
ADVENTURES IN SOUND FOR PIANO (LI)
   First Dance
   Hazy Afternoon
   Jazz Echoes
   Old Spanish Town
A Harp in the Sky

Lachenmann, Helmut
SEVEN LITTLE PIECES FOR PIANO (LI)
   Ein Kinderspiel
   Hänschen Klein

PIZZICATO

Adler, Samuel (LI)
GRADUS BOOK I
   No. 17 (LI)

Crumb, George
A LITTLE SUITE FOR CHRISTMAS
   The Shepherds’ Noël (EA)

Hovhaness, Alan
VISIONARY LANDSCAPES
   Midnight Bell I (LI)

MUTING AND DAMPING

Cooper, Paul
CYCLES FOR PIANO
   No. II (LI)

Crumb, George
A LITTLE SUITE FOR CHRISTMAS
   Adoration of the Magi (EA)

Diemer, Emma Lou
ADVENTURES IN SOUND FOR PIANO
   A Harp in the Sky (LI)
   Wind in the Sky (LI)

GLISSANDO

Bernstein, Seymour
BIRDS, BOOK 2
   Phoenix (LI)

Cooper, Paul
CYCLES FOR PIANO
   No. IX (LI)
Crumb, George
MAKROKOSMOS, VOLUME I
Music of Shadows (EA)

Crumb, George
A LITTLE SUITE FOR CHRISTMAS
Canticle of the Holy Night (EA)

Hovhaness, Alan
Fantasy for Piano, Op. 16. (EA)

HARMONICS

Adler, Samuel
GRADUS, BOOK III
Bells and Harps (LI)

Bernstein, Seymour
BIRDS, BOOK 2
Roadrunner (LI)

Bernstein, Seymour
INSECTS 2
The Black Fly (LI)

Bolcom, William
THE GARDEN OF EDEN
The Serpent’s Kiss (EA)

Crumb, George
A LITTLE SUITE FOR CHRISTMAS
Berceuse for the Infant Jesu (EA)

AUXILIARY SOUNDS

Bernstein, Seymour
BIRDS, BOOK 2
Roadrunner (LI)

Bernstein, Seymour
INSECTS 2
The Black Fly (LI)

Bolcom, William
COMPLETE RAGS FOR PIANO
Knockout: A Rag (EA)
Crumb, George
MAKROKOSMOS, VOLUME I
   Night-Spell I (EA)
   Tora! Tora! Tora! (EA)

Diemer, Emma Lou
ADVENTURES IN SOUND FOR PIANO
   Old Spanish Town (LI)

Wiggins, Thomas
   Battle of Manassas (EA)
APPENDIX B

Appendix B lists suggested works arranged by levels: late intermediate level, early advanced level, Alphabetical. The methods are abbreviated as follows:

AS- Auxiliary Sounds                      M- Muting
C- Clusters                               PI- Pizzicatos
G- Glissandos                              SV- Sympathetic Vibrations
H- Harmonics

Intermediate Level

Adler, Samuel
THE SENSE OF TOUCH
No. VIII (C)

GRADUS BOOK I
No. 17 (P)

GRADUS, BOOK III
Bells and Harps (H)

Bernstein, Seymour
BIRDS, BOOK 2
The Guinea Hen (C)
Roadrunner (H)

INSECTS 2
The Black Fly (H)

Chatman, Stephen
AMUSEMENTS, BOOK 2
Freak Out (C)

Cooper, Paul
CYCLES FOR PIANO
No. II (M)
No. IX (G)

Diemer, Emma Lou
ADVENTURES IN SOUND FOR PIANO (SV)
First Dance (SV)
Hazy Afternoon (SV)
Jazz Echoes (SV)
Old Spanish Town (SV)
A Harp in the Sky (M)
Wind in the Sky (M)
Hovhaness, Alan
VISIONARY LANDSCAPES
  Midnight Bell I (P)

*Fantasy for Piano*, Op. 16. (G)

Lachenmann, Helmut
SEVEN LITTLE PIECES FOR PIANO
  Ein Kinderspiel (SV)
  Hänschen Klein (SV)

**Early Advanced Level**

Bolcom, William
COMPLETE RAGS FOR PIANO
  Knockout: A Rag (H)

Cowell, Henry
DYNAMIC MOTION
  Amiable Conversation (C)

Crumb, George
A LITTLE SUITE FOR CHRISTMAS
  Adoration of the Magi (M)
  Berceuse for the Infant Jesu (H)
  Canticle of the Holy Night (G)
  Nativity Dance (SV)
  The Shepherds’ Noël (P)

MAKROKOSMOS, VOLUME I
  Music of Shadows (G)

Harrison, Lou
  The Reel (C)

Wiggins, Thomas
  Battle of Manassas (C, AS)


__________. “Non-Traditional Notation and Techniques in Student Piano Repertoire.” DMA. Treatise, University of Texas at Austin, 2003.


SCORES AND VIDEOS


February 22, 2023

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