By Kyu Butler, NCTM

# Conventional Piano Keyboard vs. Alternatively Sized Piano Keyboards

## A Case Study of Hand Span and Advanced Repertoire

One of the first studies examining repetitive strain injury was performed by Dr. Naotaka Sakai in Tokyo, Japan. Dr. Sakai stated in his article that the overuse of octaves and chords could cause hand injuries such as tendinitis, muscle pain, joint pain and neck pain (2002). Injuries such as these are quite common in the community of piano players. How many of you know friends or students who have sustained injuries due to piano playing? Have you been injured yourself?

### My Personal Experience with Injury

When I was preparing for a competition in 10th grade, one of the required pieces was the Chopin Ballade No.1 in G Minor. I was young, still growing and not aware that my hands were simply too small to play the required piece. As a consequence, I couldn't understand my inability to play the piece cleanly. I thought accuracy was simply a matter of technique that could be achieved through practice. I was pressed hard to practice the piece several hours a day for the competition; however, I was misled into thinking that I had the physical attributes necessary to practice the piece and play it accurately without negative consequences. Though I eventually won the competition, the tendons in my hand were severely injured, requiring surgery. When I met with the orthopedic surgeon, he concluded the injury was caused by not practicing correctly. In fact, he blamed me for the injury! As a result, I was hurt, not only physically but emotionally.

A second injury to my hand occurred while preparing for doctoral recitals that required three hours of repertoire for completing the degree. One of the pieces was the Liszt Sonata in B Minor, known for its octave passages and large chords. Again, because I was not aware of the hand span needed to adequately undertake this piece, I opted to play it in my recital. My hand span is of the average size for adult females (about 7.9 inches) (Boyle, Boyle and Booker 2015). In my judgement, I thought my hand size was sufficient—I can reach a 10th (but barely). I wanted to prove that I had the skills necessary to play demanding pieces. Unfortunately, the outcome was not what I anticipated. I suffered a recurrence of my earlier injury, and my piano professor canceled my recital. Unfortunately, that meant my doctoral degree was on hold.

Since then, I have learned the importance of choosing repertoire that fits the pianist's hand comfortably. I realized that had I known about the relationship between hand spans

and repertoire selection, I could have avoided much of the physical and emotional distress endured and likely would have completed my doctoral program at that time. After this devasting turn of events, I wanted to learn more about preventing injuries and turned to Carol Leone, a piano professor at Southern Methodist University in Dallas, for advice. As a result of our meetings, I conducted this unique research that explores hand span measurements and looks at an important option for pianists who do not want to limit their repertoire.

## Methodology

In this research, 12 pieces of solo repertoire commonly assigned to advanced pianists were chosen from various styles and genres. Large intervals from these 12 pieces were identified using two criteria. First, intervals of an octave or larger that are played with thumb to pinky finger. Second, intervals of a 6th or larger than that are played with point fingers to pinky (in the 1-2-5, 1-2-4-5 or 1-2-3-5 position). The distance between these intervals was measured in inches on three different keyboard sizes: DS6.5, DS6.0 and DS5.5. Intervals were measured between the left sides of each key. Hand span requirements were determined using the method described by Rhonda Boyle and DS Standard Foundation. Hand-span size was determined by marking the outer edges of the fingers when the hand is laid flat and fully extended. Three female students with smaller hands and ages 16–25 participated in the study, playing the selected repertoire on three different piano keyboards for the case study.

## Hand Span

David Steinbuhler from DS Standard Foundation offers a chart to measure hand spans (2019a). (see figure1) This chart provides an objective scientific approach for measuring hand span. Steinbuhler used this chart to collect data from the 2004 MTNA Conference. Otto

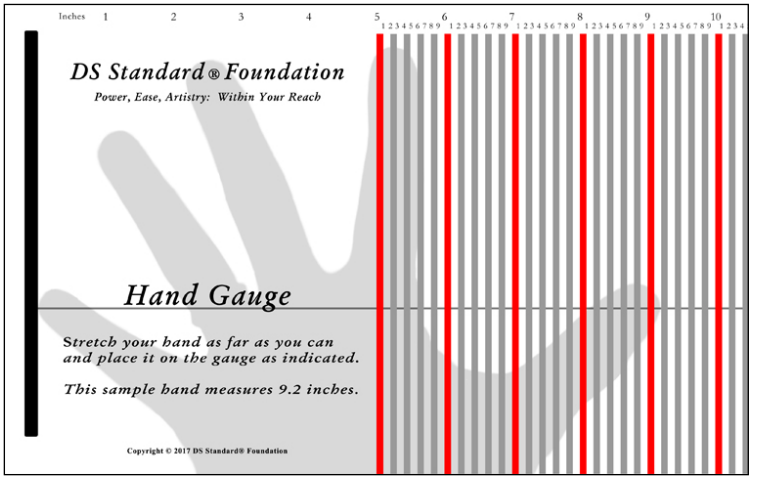


**Figure 1: David Steinbuhler's Hand Gauge**

Ortmann's Palm Size on Angles of Finger Abduction (see figure 2) shows a different way of approaching hand span. Rather than measuring the greatest width of 5th finger to thumb, this approach considers the width of the palm, length of the fingers and the maximum spread between fingers. To adapt data collected from other researcher's research, the author used Steinbuhler's Hand Gauge method.

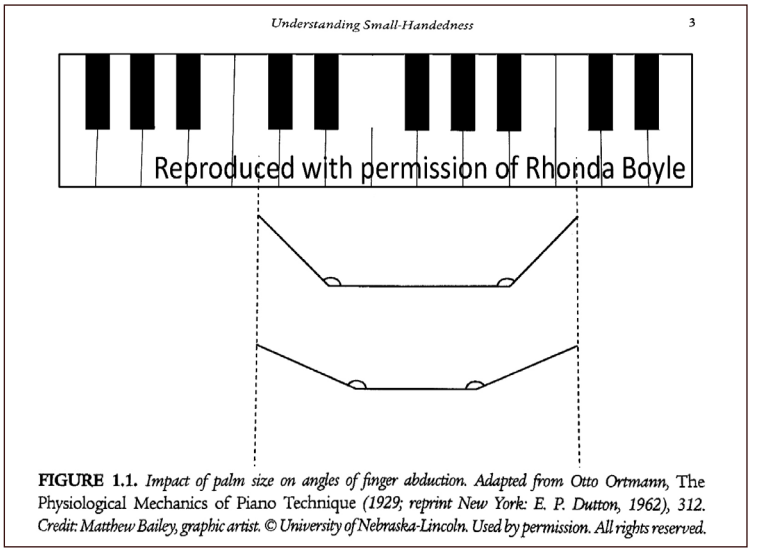


**Figure 2: Otto Ortmann's Palm Size on Angles of Finger Abduction**

A study conducted by Rhonda Boyle, Robin Boyle and Erica Booker (2015) collected data from 473 pianists in Sydney, Australia, using the previously mentioned Steinbuhler Hand Gauge. Their data indicates an average female adults' thumb-to-fifth-finger hand span is 7.9 inches, and for males it is 8.9 inches. (see figure 3). Their research suggests that no concert pianists have hand spans in the 7.9-inch zone, while most famous concert pianists hand spans are bigger than the average male's. Interestingly, pianists with hand spans between 7.9 and 8.9 inches are considered "small-handed." This research coupled with the number of females in music schools and music organizations, indicates that many pianists are at significant disadvantage when playing piano and have a higher risk of injury.

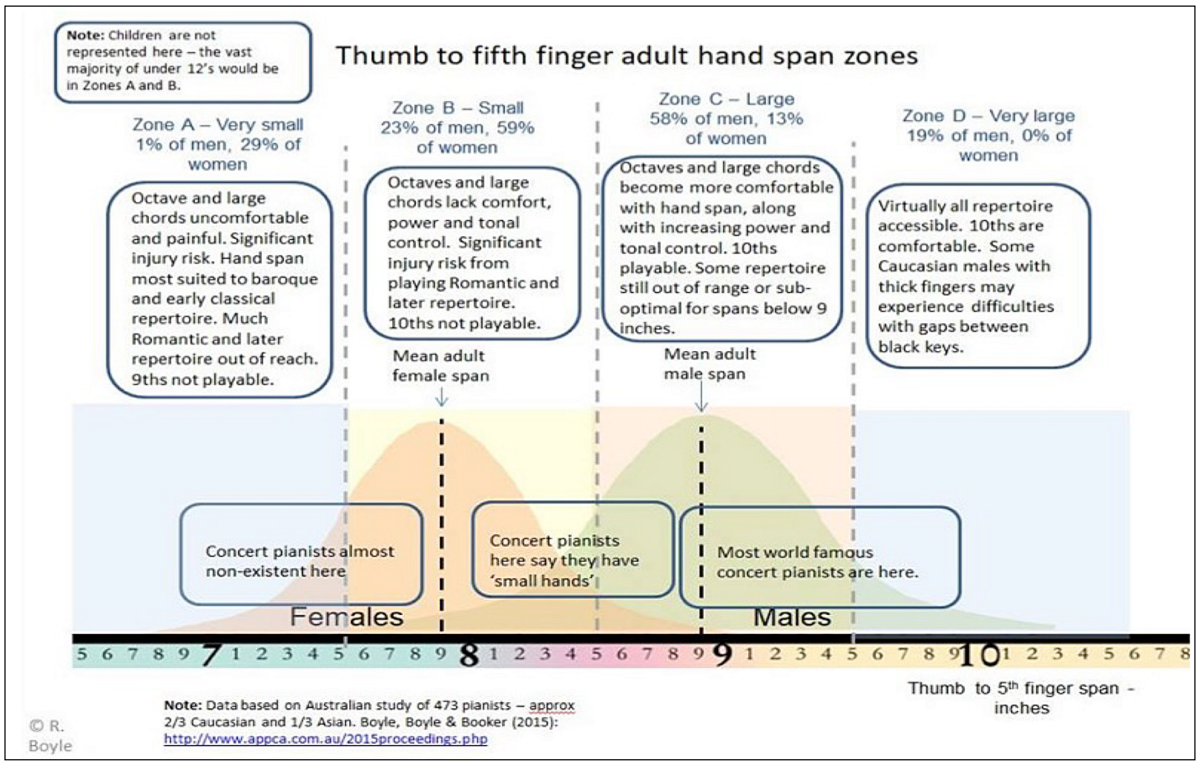


**Figure 3: Adult Hand Span Zones (Thumb to Pinky Finger): Reproduced with permission Rhonda Boyle**

## Repertoire

Normally, repertoire selection for a recital is subjective. Students select pieces they like to play. Some want to play "show-off" pieces or select pieces they believe will give them a competitive advantage. Others want to learn repertoire from different periods. However, those with smaller hand spans have limitations on their options when choosing a repertoire. Lora Deahl and Brenda Wristen stated, "Since small-handed pianists must frequently play with the hand stretched to its maximum, they often struggle to provide the finger joint support that is needed to deliver the power of the arm into the key" (2017, 56). They also stated small-handed pianists are challenged by fatigue, lack of power and/or reach and should monitor their practice. Injury prevention, especially for young students with growing hands, requires understanding the relationship between hand size and the intervals that can be played without overly stressing the hand and wrist.

A total of 12 pieces of advanced repertoire were selected for this research: One baroque, three classical, three romantic and five 20th century. Interval distances in each piece and on three differently sized keyboards were determined. A chart of the largest interval distances is provided in the appendix of this article. The size of the intervals does not necessarily correspond with the level of difficulty. The measurements are only horizontal-distance measurements from the left side of one key to another. In actual playing, one has to possess a hand span that exceeds that measurement by one or two inches to play with ease and comfort. Knowing the span of the largest interval distance of a piece informs one of the required hand spans to play the piece with ease and aids in the selection of appropriate repertoire and reduces the chance of injury. The author did not account for places that could be accommodated by using clever finger redistributions and pedaling, and these measurements do not include slanted distances.

## Keyboard Size

Piano is the only musical instrument that limits choice of repertoire based on the artist's physical features. The modern piano keyboard is "one-size-fits-all," whether one is a 6-foot-tall man or a small 5-year-old child. In the evolution of keyboards, the ancestors of piano often had keyboards smaller and narrower than those of the modern piano, for example, harpsichord, fortepiano, clavichord and so on vary in size and range. According to Dr. Sakai, a piano's keys in the 18th century varied in the size from 6.13 inches and 6.4 inches in octave (2008). (see figure 4).

| | | |
|---|---|---|
| Cristofori's keyboard in 1720 | 6.5"octave | 48.25" overall width |
| 1784–1825 smallest keyboards | 6.13" octave | 45.5" overall width |
| 1784–1825 average keyboards | 6.3" octave | 46.8" overall width |
| 1784–1825 largest keyboards | 6.4" octave | 47.5" overall width |
| 1826–1875 keyboards | Same as conventional pianos | |
| 1876–2000 smallest keyboards | 6.46" octave | 48" overall width |
| 1876–2000 average keyboards | 6.5" octave | 48.25" overall width |
| 1876–2000 largest keyboards | 6.54" octave | 48.50" overall width |

**Figure 4: Dr. Naotaka Sakei's Research**

In the 19th century, famous virtuosos such as Liszt and Kalkbrenner began to perform in large concert halls, where they wanted larger instruments with extended sound and range. Manufacturing companies began to standardize a larger keyboard as well. Those pianos were the same size as the modern pianos: 6.5 inches in octave, which can fit European males whose hand spans are on average a full inch wider than those of adult females. Jozef Hofmann, a Polish-born, child prodigy, virtuoso pianist and a genius inventor used a customized piano keyboard (Kepa 2017). He toured with customized pianos built by Steinway & Sons with narrower keys to accommodate his smaller hand span (Steinbuhler 2019b).

In addition to the size of keys, Deahl and Wristen took this one step further. They compared the weight for full key depression, string tension in the middle register, length of black key, length of portion of white key in front of black key, height of black key surface above white surface, white key dip and black key dip (2017, 8–12). All of these features of the modern pianos are significantly larger and heavier compared to instruments made in the 18th century.

## Alternatively Sized Piano Keyboards

In the last 20 years, piano keyboards with alternative sizes have become commercially available. These offer children and adults alike an option to avoid injury, expand repertoire choices and prolong careers. The conventional piano keyboards with 88 keys are 48 inches in width and the octave of conventional piano keyboards is about 6.5 inches with less than ±.04 tolerance. Steinbuhler has been working with small handed pianists since 1998 and found that a 48-inch keyboard is too wide for small-handed pianists. He labeled the conventional keyboards as DS6.5. He also labeled a 45-inch wide, 6-inch octave keyboard as DS 6.0 and a 42-inch wide, 5.5-inch octave keyboard as DS5.5 (2019b) (see figure 5). As shown in Figure 6, these keyboards can be switched between conventional grand piano keyboards as needed. There is a piano keyboard for children, but this research does not include that specific keyboard.

| Nomenclature | Description | Actual Octave size in Inches | Overall Width for 88 Keys |
|---|---|---|---|
| DS6.5® | Conventional Keyboard | 6.50 ± .04 or 6.46 to 6,54 | 48.25" |
| DS6.0® | Universal Keyboard | 6.00 ± .04 or 5.96 to 6.04 | 44.53" |
| DS5.5® | 7/8th Keyboard | 5.54 ± .04 or 5.50 to 5.58 | 41.10" |

**Figure 5: DS Standard Foundation's Alternatively-Sized Piano Keyboards (www.steinbuhler.com)**

**Figure 6: Alternatively Sized Piano Keyboards**

## Case Studies

### Participant No. 1 and the Chopin G Minor Ballade

The first participant was a 10th-grade female with a right-hand span of 7 inches and a left-hand span of 7.3 inches for thumb to pinky finger, and 5.4 inches on the right hand and 5.8 inches on the left hand for pointer finger to pinky finger. Steinbuhler's Hand Gauge was used to measure her hand. The student played the Chopin Ballade No.1 in G Minor. The largest left-hand interval of this piece is in measure 33, shown in figure 7. It is an octave F-F, but the interval of lower F (finger 5) to E-flat (index finger) is a 7th. Figure 8a illustrates the participant's hand playing this chord with her left hand, and it appears that she is able to negotiate all of the keys,. However, to play this chord repeatedly five times as it is written, she had to omit the top F. Figure 8b is a side view of her hand. The placement of her index finger on E-flat is very unstable. She was not able to play the chord more than two times in a row, because she could not play E-flat comfortably.

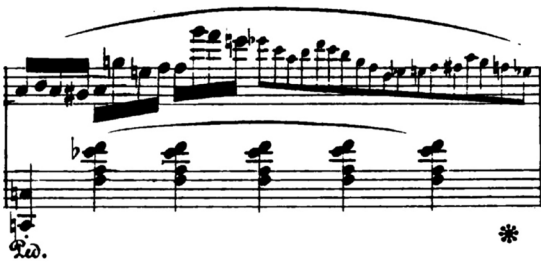

**Figure 7: Chopin Ballade in G Minor mm.33 LH**

**Figure 8a: Conventional Piano**

**Figure 8b: Conventional Piano**

Instead of omitting the top F or giving up on this piece, there is a way to solve this problem. Figure 9 shows images of the student playing the same chord on a DS6.0 piano keyboard model, and a DS5.5 piano keyboard model. The two images in figure 9 clearly show that the placement of the index finger is much more stable, and the image of the pianist using the DS5.5 shows that the fingers for all four notes are perfectly in position.

**Figure 9a: DS6.0**

**Figure 9b: DS5.5**

In this Ballade, the right hand has an interval of a 9th on the last beat in measure 114 (figure 10). The thumb must play both D and E together. Figure 11 shows the student playing this chord. Though she was able to pose for this chord in the photo, she was not actually able to depress all the keys cleanly. Figures 12a and 12b illustrate her hand on DS6.0 and DS5.5. To play this smoothly, the DS5.5 would be an ideal fit for her.

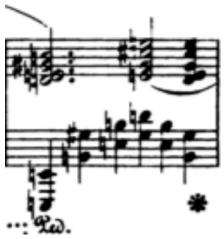

**Figure 10: Chopin Ballade in G Minor mm.114 RH**

**Figure 11: Conventional piano**

**Figure 12a: DS6.0**


**Figure 12b: DS5.5**

## Participant No. 2 and the Moonlight Sonata

The second participant was a female college freshman with a right-hand span of 6.9 inches and left-hand span of 7.1 inches from thumb to pinky finger, and 5.8 inches on the right hand and 6.0 inches on the left hand for pointer finger to pinky finger. Her right hand is one full inch smaller than the average female's. Her piece was Beethoven's Moonlight Sonata. The largest interval distance of this piece for the right hand is in measure 59 in the first movement (see figure 13). Though it is not an allegro first movement, there is a perpetual extended pattern throughout the piece, which adds the complication of repetitive stretching. In measure 59, there is a 9th required from F-sharp to G-sharp. She was not able to reach the interval on the conventional piano keyboard pictured in figure 14. However, she could play this interval with ease on the DS5.5 keyboard. Figures 15a and 15b show the clear comparison of how the hand span problem was solved. Her hand fits perfectly on DS5.5 in figure 15b. She could reach this interval on DS6.0, but not comfortably.

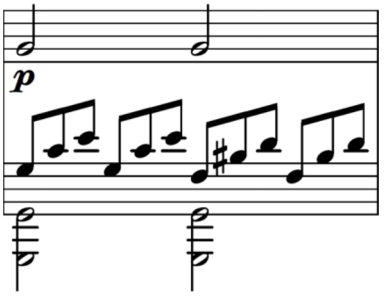


**Figure 13: Beethoven Moonlight Sonata mm.59 1 mvt. RH**

**Figure 14: Conventional Piano**


**Figure 15a: DS6.0**

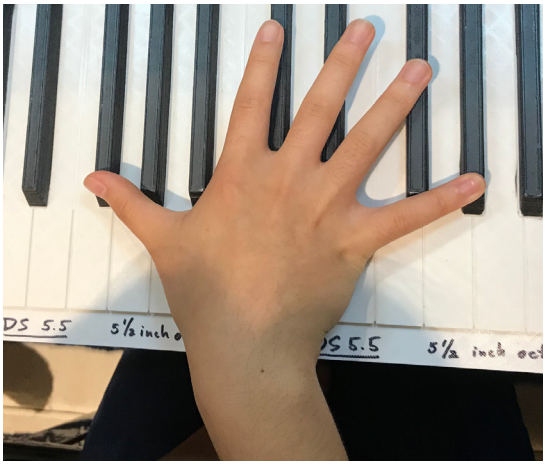


**Figure 15b: DS5.5**

For the left hand, the largest interval distance is in the third movement, in measure 128 (see figure 16). From the bottom F-sharp (finger 5) to D (index finger) there is an interval of a 6th, which is not easy to reach because the thumb has to extend to the F-sharp. Figure 17 shows her playing the chord. It seems as if she is able to touch each note in the chord, but when she played the piece, because of the fast tempo and the Alberti bass from the previous measure, she was not able to position her hand and depress the notes in time. Figures 18a and 18b illustrate the comparison using DS6.0 and DS5.5. It is clear that her wrist is lower than the conventional piano on both of these alternatively-sized piano keyboards. She can position her fingers comfortably on both.

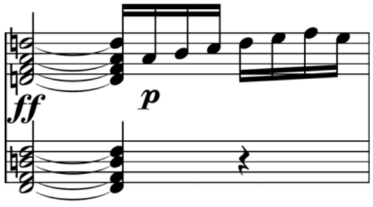


**Figure 16: Beethoven Moonlight Sonata mm.128 in 3 mvt. LH**

**Figure 17 Conventional Piano**


**Figure 18a: DS6.0**


**Figure 18b: DS5.5**

## Participant No. 3 and Gershwin's Three Preludes

The third participant was a female graduate student with a right-hand hand span of 8.1 inches and left-hand span of 8.4 inches from thumb to pinky finger, and 6.1 inches on her right hand and 6.5 inches on her left hand for pointer finger to pinky finger. Her hand spans are larger than average for a female, but smaller than average for a male. Her piece selected was Gershwin's Three Preludes. In the first Prelude, the largest right-hand interval is in measures 27 and 28 (figure 19). It is a held 9th from B-flat to C for two measures. Figure 20 shows her 5th finger is slightly pressing B as well as C. While holding her thumb on B-flat, the 4th and 5th fingers must play repeated notes on B-flat and C. The last repeated note on C is marked with both accent and tenuto. The tempo is allegro and the left hand can't cover for the right hand to help with this passage. Figures 21a and 21b display the comparison using DS6.0 and DS5.5 keyboards. It is clear that her 5th finger is less extended when compared to playing on a conventional piano. She said that she felt good playing on DS6.0.

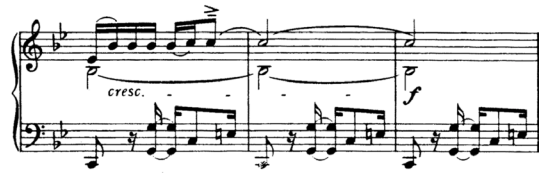


**Figure 19: Gershwin Three Preludes mm.26–28 in No.1 RH**


**Figure 20: Conventional Piano**

**Figure 21a: DS6.0**


**Figure 21b: DS5.5**

In the second Prelude, the largest left-hand interval is in measure 24 (figure 22). It is interval of a 10th from G-sharp to B-sharp (C). When this left-hand passage was played in another part of this piece, the right hand is able to play the B-sharp. However, since the right hand is playing an octave passage in this measure, the left hand has to play both notes at once. Ideally, the 10ths in this movement are played blocked. Figure 23 clearly displays that she is not able to reach these two notes on a conventional piano. On either DS6.0 or DS5.5, figures 24a and 24b show her hands were less tense and extended. This participant preferred DS5.5 for this movement.

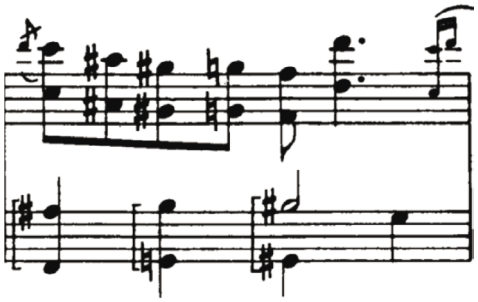

**Figure 22: Gershwin Three Preludes mm.24 in No.2 LH**

**Figure 23: Conventional Piano**


**Figure 24a: DS6.0**


**Figure 24b: DS5.5**

## Conclusion

These cases illustrate some of the disadvantages experienced by pianists with smaller hand spans. They have limited options for repertoire and higher risk of injuries. Research such as this can raise awareness of the well-being of pianists and the necessity for the alternatively sized piano keyboards to expand opportunities for pianists with smaller hands.

Universities and piano competitions are recognizing a need for these alternatively sized keyboards. The Dallas International Piano Competition offered the contestants the option to compete using alternatively sized piano keyboards (Leone 2015). The author suggests that other performance venues, piano manufacturers and organizations understand the importance of needs and consider providing alternatively sized piano keyboards for concerts, competitions and performances.

Although pianists understand that it is beneficial to use alternatively sized piano keyboards, it might not be a realistic option for most teachers and students. To make the access to alternatively sized piano keyboards easier, DS Standard Foundation recently started to lend DS6.0 and DS5.5 piano keyboards for free to universities and music organizations.

## Appendix

1–5 indicates the distance between the thumb and 5th finger. Only octaves or larger intervals are listed. X indicates that those intervals were not present.

2–5 indicates the distance between fingers 2-5 in the 1-2-5, 1-2-4-5, or 1-2-3-5 positions. Mostly intervals of the 6th or larger are listed. X indicates that those intervals were not present.

### Largest Interval Distances Classical & Baroque Repertoire

| Composer | Title | Hand | Largest Interval Distances in Inches | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | DS 6.5 | | DS 6.0 | | DS 5.5 | |
| | | | 1-5 | 2-5 | 1-5 | 2-5 | 1-5 | 2-5 |
| Beethoven | Moonlight Sonata, Op.27 No.2, 1 mov. | RH | 7.5 | 5 | 6 7/8 | 4 5/8 | 6 3/8 | 4.25 |
| | | LH | 6.5 | x | 6.0 | x | 5.5 | x |
| | Moonlight Sonata, Op.27 No.2, 2 mov. | RH | 6.5 | x | 6.0 | x | 5.5 | x |
| | | LH | 6.5 | x | 6.0 | x | 5.5 | x |
| | Moonlight Sonata, Op.27 No.2, 3 mov. | RH | 6.5 | 5 1/8 | 6 | 4.75 | 5.5 | 4 3/8 |
| | | LH | 7.0 | 4 3/8 | 6.5 | 4 | 6.0 | 3.75 |
| Haydn | Sonata in F Major, Hob. XVI/23: L. 38, 1 mov. | RH | x | x | x | x | x | x |
| | | LH | 6.5 | x | 6.0 | x | 5.5 | x |
| | Sonata in F Major, Hob. XVI/23: L. 38, 2 mov. | RH | x | x | x | x | x | x |
| | | LH | 6.5 | x | 6.0 | x | 5.5 | x |
| | Sonata in F Major, Hob. XVI/23: L. 38, 3 mov. | RH | x | x | x | x | x | x |
| | | LH | 6.5 | x | 6.0 | x | 5.5 | x |
| Mozart | 10 Variations on 'Unser drummer 'Pobel meint' in G Major, K. 455 | RH | 6.5 | 5.25 | 6 | 4 7/8 | 5.5 | 4.5 |
| | | LH | 6.5 | x | 6.0 | x | 5.5 | x |
| J. S. Bach | French Suite No. 5 in G Major, BWV 816, Allemande | RH | 6.5 | x | 6.0 | x | 5.5 | x |
| | | LH | 6.5 | 5.0 | 6.0 | 4 5/8 | 5.5 | 4.25 |
| | French Suite No. 5 in G Major, BWV 816, Courante | RH | x | x | x | x | x | x |
| | | LH | 6.5 | x | 6.0 | x | 5.5 | x |
| | French Suite No. 5 in G Major, BWV 816, Sarabande | RH | x | x | x | x | x | x |
| | | LH | 6.5 | x | 6.0 | x | 5.5 | x |
| | French Suite No. 5 in G Major, BWV 816, Gavotte | RH | x | x | x | x | x | x |
| | | LH | x | x | x | x | x | x |
| | French Suite No. 5 in G Major, BWV 816, Bourree | RH | x | x | x | x | x | x |
| | | LH | x | x | x | x | x | x |
| | French Suite No. 5 in G Major, BWV 816, Loure | RH | 6.5 | x | 6.0 | x | 5.5 | x |
| | | LH | x | x | x | x | x | x |
| | French Suite No. 5 in G Major, BWV 816, Gigue | RH | 6.5 | 4.75 | 6.0 | 4.25 | 5.5 | 4 |
| | | LH | 6.5 | x | 6.0 | x | 5.5 | x |

### Largest Interval Distances Romantic Repertoire

| Composer | Title | Hand | Largest Interval Distances in Inches | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | DS 6.5 | | DS 6.0 | | DS 5.5 | |
| | | | 1-5 | 2-5 | 1-5 | 2-5 | 1-5 | 2-5 |
| Brahms | Two Rhapsodies, Op.79 in b minor | RH | 6.5 | 5.0 | 6.0 | 4 5/8 | 5.5 | 4.25 |
| | | LH | 7.75 | 4 7/8 | 7.25 | 4.5 | 6 5/8 | 4 1/8 |
| | Two Rhapsodies, Op.79 in g minor | RH | 6.5 | 5.0 | 6.0 | 4 5/8 | 5.5 | 4.25 |
| | | LH | 6.5 | 4.75 | 6.0 | 4 3/8 | 5.5 | 4.0 |
| Chopin | Ballade No. 1 in g minor, Op. 23 | RH | 7.5 | 5 3/8 | 6 7/8 | 4.75 | 6 3/8 | 4 3/8 |
| | | LH | 8 3/8 | 5.25 | 7.75 | 4 7/8 | 7 1/8 | 4.5 |
| Schubert | Sonata in A Major, D. 664, 1 mov. | RH | 9.25 | 5 1/8 | 8.25 | 4.75 | 7 7/8 | 4 3/8 |
| | | LH | 6.5 | 5 1/8 | 6 | 4.75 | 5.5 | 4 3/8 |
| | Sonata in A Major, D. 664, 2 mov. | RH | 7 3/8 | 5 | 6 7/8 | 4 5/8 | 6 3/8 | 4.25 |
| | | LH | 8 | 4.75 | 7 3/8 | 4 3/8 | 6 7/8 | 4 |
| | Sonata in A Major, D. 664, 3 mov. | RH | 6.5 | 4 3/8 | 6.0 | 4 1/8 | 5.5 | 3.75 |
| | | LH | 7.75 | 4 3/8 | 7.25 | 4 1/8 | 6 5/8 | 3.75 |

### Largest Interval Distances Romantic Repertoire

| Composer | Title | Hand | Largest Interval Distances in Inches | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | DS 6.5 | | DS 6.0 | | DS 5.5 | |
| | | | 1-5 | 2-5 | 1-5 | 2-5 | 1-5 | 2-5 |
| Bartok | Suite, Op.14 No. 1 | RH | 6.5 | x | 6.0 | x | 5.5 | x |
| | | LH | 6.5 | x | 6.0 | x | 5.5 | x |
| | Suite, Op.14 No. 2 | RH | 6.5 | x | 6.0 | x | 5.5 | x |
| | | LH | 8 3/8 | 6.5 | 7 3/4 | 6 | 7 1/8 | 5.5 |
| | Suite, Op.14 No. 3 | RH | 6.5 | x | 6.0 | x | 5.5 | x |
| | | LH | 7 1/8 | 4 7/8 | 6 5/8 | 4.5 | 6 1/8 | 4 1/8 |
| | Suite, Op.14 No. 4 | RH | 7 3/8 | 5 1/8 | 6 7/8 | 4.75 | 6 3/8 | 4 3/8 |
| | | LH | 8 3/4 | x | 7.25 | x | 7 3/8 | x |
| Debussy | Preludes, Vol. 1 No. 5, Les collines d'Anacapri | RH | 6.5 | 4 3/8 | 6.0 | 4 1/8 | 5.5 | 3.75 |
| | | LH | 8 5/8 | 5.25 | 8.0 | 5.0 | 7.25 | 4 3/8 |
| Gershwin | 3 Preludes, Prelude I | RH | 7.5 | x | 7 | x | 6 3/8 | x |
| | | LH | 8 1/8 | 5.25 | 7.5 | 4 7/8 | 6 7/8 | 4.5 |
| | 3 Preludes, Prelude II | RH | 6.5 | 5.25 | 6.0 | 4 7/8 | 5.5 | 4.5 |
| | | LH | 8 7/8 | 5 1/8 | 8 1/8 | 4.75 | 7.5 | 4 3/8 |
| | 3 Preludes, Prelude III | RH | 6.5 | 4.25 | 6.0 | 4 | 5.5 | 3 5/8 |
| | | LH | 7 1/8 | x | 6.5 | x | 6 | x |
| Rachmaninoff | Etudes – Tableaux, Op. 39 No. 5 in E-flat minor | RH | 6.5 | 5.25 | 6.0 | 5.0 | 5.5 | 4 3/8 |
| | | LH | 7.75 | 5 1/8 | 7 1/8 | 4 5/8 | 6 5/8 | 4.25 |
| Ravel | Sonatine in F-sharp Major, No. 1 | RH | 7.75 | 4 5/8 | 7 1/8 | 4.25 | 6.5 | 4 |
| | | LH | 7 7/8 | 5.0 | 7 1/8 | 4 5/8 | 6 5/8 | 4.25 |
| | Sonatine in F-sharp Major, No. 2 | RH | 6.5 | 6.0 | 6.0 | 5 5/8 | 5.5 | 5 1/8 |
| | | LH | 6.5 | x | 6.0 | x | 5.5 | x |
| | Sonatine in F-sharp Major, No. 3 | RH | 7 3/8 | 4.25 | 6 7/8 | 4.0 | 6 3/8 | 3.75 |
| | | LH | 7 5/8 | 5 1/8 | 7 | 4.75 | 6.5 | 4 3/8 |

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Author Note: I would like to acknowledge Carol Leone, Andrew Butler, Frank Yin, Grace Yin and Rhonda Boyle for comments and feedback during the writing of this article.

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