# Braille Music and UEB in Practice in the UK

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### We would like to thank the ICEB 2016 Papers Review Committee for giving us the opportunity to publish this paper, and subsequent presentation at the Assembly in May 2016.

Recognising that a key theme of this ICEB Assembly is UEB research and results of UEB implementation, this paper presents challenges and opportunities in a changing environment. We have identified five key objectives for discussion within the paper, after an initial introduction to braille music:

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History of braille music

Louis Braille used his six dot raised cell system not only for the alphabet but also for representing musical sounds akin to printed stave notation. Both braille music and stave notation are based on accurate representation of pitch and of duration. The note pitch system is absolute, using letters A to G with sharps and flats, where as the note durations are relative, in proportion to the chosen pulse. Braille music was intended, from the outset, to enable blind musicians to access print music without sighted assistance.

Louis Braille played the piano and cello when a child. He became a professional organist. In 1829, he produced his methods for tactile codes in “Method of Writing Words, Music and Plain-Songs by Means of Dots for Use by the Blind and Arranged for Them.” [[1]](#endnote-1)In 1834 he demonstrated the method at an Exposition of Industry in Paris. In the following year, the Paris School for the Blind[[2]](#endnote-2) officially adopted the code. Louis Braille continued to make changes to his code (something that continues today) and, despite being in poor health in 1837, he produced a second edition of his “Method.”[[3]](#endnote-3)

In 1885 the Paris Institution published its first manual for the braille music code, whilst other countries were beginning to be interested in the method. As early as 1870, Dr Armitage, for example, commissioned the writing of a pamphlet in English explaining not the code itself but how it was taught in Paris. In 1871 Germany adopted braille music with some national variations. The UK however did not formally adopt braille music until the 1930’s. [[4]](#endnote-4)

There has been a series of meetings to develop the braille music code. The first was held in Cologne in 1888. In 1929 a congress in Paris concentrated upon keyboard music. (Bar-By-Bar and Vertical Score layouts were used in the UK from around 1915 until 1956.) A further conference in Paris in 1954 led to H.V. Spanner’s Revised International Manual of Music Notation being published in the UK in 1956. This volume is Part 1, tackling stave notation. There was a plan to produce Part 2 devising braille music for non-western musical notations but this was never realized. The main change in the braille music code in Spanner is the adoption of Bar-Over-Bar format becoming the norm. This was followed by Bettye Krolick’s Dictionary of Braille Music Signs published in 1979 by the Library of Congress, USA which includes lists of international differences in the code. Conferences held in Moscow in 1982 and in Prague in 1985 were eager to unify the code further internationally. In 1987 a conference in Marburg, Germany pursued this and again analysed international differences. A conference in 1992 in Saanen, Switzerland had the largest international attendance to date. This 1992 meeting led to the production of the current standard for braille music by the Braille Music Subcommittee of the World Blind Union. The New International Manual of Braille Music Notation was produced in 1996 in English, compiled by Bettye Krolick.[[5]](#endnote-5)

Alongside manuals stating the use of signs and rules of layout, primers for learning braille music have been produced. The first in the UK, still in use after several revisions, was written by Edward Watson and produced by the British and Foreign Blind Association (now RNIB) in 1901 in braille, with a further edition in 1922.[[6]](#endnote-6) The print versions were published by a leading music publisher of the day, Novello.[[7]](#endnote-7) This is considered to be the first course of lessons for braille music in the world.

During the time between Louis Braille inventing the braille music code and the current code of 1996, stave notation itself has evolved, requiring the creation of standard ways of presenting new signs in braille music. A widely used example is that of chord symbols used in popular music usually placed in boxes, often with guitar tab, above the print stave. A colossal amount of sheet music was produced in the 1920s and 1930s with chords, as is much popular music today. Another example is the use of “stem signs” to show notes with duration but no pitch. Many methods of introducing stave notation, particularly to young children, start with rhythmic values illustrated with clapping games and flash cards of bars of note values that can be strung together to make phrases. Louis Braille linked pitch and rhythm from the outset. Stem signs are used in the UK for passages where candidates in formal music examinations are required to supply the pitches of certain notes in an extract of music they hear where the rhythm is supplied. Stem signs are easily located in braille music as each duration is preceded by dots 4, 5, 6.

In braille music, obscure signs are usually described in a transcriber’s preface. Similarly unusual signs, or unusual use of signs, are explained in a box in print scores. Overall, both systems have the same aim of conveying to the reader musical ideas within certain traditions from a composer or arranger who originally writes these symbols. The ultimate aims of the reader whether looking at print or touching dots are the same. However the routes to achieve those aims, such as performance and analysis, are different. These differences have implications for how people are effectively taught to read and write the notations.

### **The relevance of braille music today**

Simply, where sighted people are using stave notation, the braillist should have braille music. Such an ideal, however, is not currently achieved for many reasons.

From early childhood, sighted children see people using musical scores and see stave symbols around them, for example, from jewelry design to wall charts. Many proficient stave notation readers would need to think a while about how they acquired this skill, embedded as it was in their wider general musical education. By contrast, most people do not know that there is braille music.

### Braille music is not used in the same way as stave notation, though it conveys the same information. Almost all braille music readers need to memorise music and then perform it, rather than reading and playing at the same time as stave notation performers do.

Learning to read music notation of any kind is rarely a discrete activity. Learning to read, and, less frequently, write, stave notation is largely an add-on to learning an instrument or singing in a choir. The steps to learn the meaning of the print symbols representing sounds are not ordered, but are subordinate to the technical requirements of the instrument being learnt or the vocal repertoire tackled. Whilst many teachers involved in such teaching are proficient music readers, their beginner pupils pick up the meaning of only some symbols, ignoring others and picking up other elements by ear. If a blind student joins the class, there is a high chance that this student picks up the music by ear very quickly and accurately thus avoiding the need to learn any notation, or indeed bother with what technical terms relating to notation actually mean.

The chances of the music teacher knowing anything about braille music are extremely low. This can lead to advanced performers learning their repertoire second hand from recordings and live demonstration but needing to go back to the musical equivalent of “the cat sat on the mat” when they commence studying musical literacy in braille. Learning from braille music, however, enables the musician to access all the detail in the print score, including inaudible elements such as fingering, tempo indications. Braille music gives precision.

Overall a proficient stave notation player reads and plays at the same time, or at least a millisecond apart. Indeed, in the UK, certain areas of music making, notably professional orchestral and session work, have relied on proficient “sight reading”. The basic means of becoming a fluent sight reader is simply to put hours and hours into reading unfamiliar music. The brain becomes accustomed to the graphic shapes of elements in the score, such as left hand figurations in classical piano music, the linking of certain pitches to options for slide positions for trombonists, the range of fingers on different strings for a melodic passage for string players etc. There has been much research into efficient reading and what can interfere, and wise music publishers consider these in their editions.

Braille music is not a graphic code and each element in a score has to be read and interpreted in a linear fashion. A particular cell may have several meanings depending on surrounding cells, much as the meaning of a particular cell in contracted literary braille. Most braillists need to memorise the music before they can perform it as their reading fingers are needed for playing instruments, although singers can read and perform concurrently. This eliminates sight reading as an option. The need to memorise also has implications for musical parts that are in themselves very uninteresting though vital to a greater whole. Memorising the second violin or the viola part of a Bruckner symphony is a tall order.

Whilst primarily used for performance, the purpose intended by the originator, the composer or arranger, music scores are used for other reasons. These apply similarly to both stave notation and braille music readers. A music teacher might use music scores whilst teaching to see what repertoire to use. A choral director of classical repertoire will prepare scores for others to perform and an academic may follow a score whilst listening to it, or indeed to listen to it without external sound sources.

### **Braille music in the UK now**

Today, most children learning braille in the UK attend local mainstream schools whilst all of the few remaining schools for the blind take a majority of pupils who have severe sight loss and additional difficulties. So braille reading musicians under the age of thirty five have usually learnt braille music whilst at mainstream school or at college or university. At school they would have been involved in music making through their local music service (currently known as a “hub”) or more generally in the local community. Usually they would be the only blind musician. They might learn braille music with an instrumental teacher, their special classroom support (a Qualified Teacher of the Visually Impaired, or a Higher Level Teaching Assistant, both of whom may have a general braille qualification). Some youngsters teach themselves. No special school for the blind has regular braille music tuition currently.

For people in their forties and older who have been blind since childhood, they are most likely to have learnt braille music in a school for the blind. The older section of these people are in turn likely to have learnt from a blind music teacher who was often also an accomplished musician and who may have been an inspirational role model with high expectations for their pupils. These older musicians using braille music may well be part of a network of “old girls or boys” who swap braille music files and hardcopy scores.

Braille music is a means of independent learning, rehearsing and performing of repertoire where sighted colleagues use stave notation. For young people it is used in external, non-compulsory, examinations in the UK at ages 16, 17 and 18. Very few, however, professional classical musicians use braille music as either their main source material or as a backup to audio materials. A few people use braille music for composing but more blind people use mainstream notation and sequencing packages without braille music input or output.

We suspect that over the last fifty years there has been a decline in the number of professional pianists and organists with serious sight loss using braille music, balanced by a rise in woodwind players. The largest group of professional musicians are private instrumental teachers. The largest group of amateur musicians using braille music are singers, mainly in large choral societies.

### Sighted musicians most likely have no awareness of braille music even amongst stave notation readers until a blind person arrives at a rehearsal. Once a musician using braille music displays competency in a rehearsal, great fascination and admiration in how raised dots can be musical symbols usually ensues!

In the UK in the early part of the twentieth century, various blind organizations invested in the training for, and placement in, employment in three major strands: the music business (including piano tuning, piano teaching and church organists), telephony and physiotherapy. As these organizations have diversified, this specific vocational interest has been diluted. This impacts on the learning, and the production, of braille music.

Software and hardware have expanded possibilities for braille music, including the use of virtual scores on portable devices. Within the UK there has been very little research and development in this field, with insufficient continuity to provide the accuracy in automatic transcription or the navigability and adaptability in product to replace expert manual transcription and hardcopy. Various organizations and individuals in the UK though do make use of a commercial American package for transcription. Five years ago there were several commercial organizations producing braille music but these are now reduced to two official transcription agencies.

There has been a small amount of research into multimedia packages. For all but the most ardent, most competent music braillists, the main result of user testing has been that users shortcut notation to learning by ear from the sound output.

### **Fostering braille and musical competency**

### Since the 1980s, RNIB in England has been running graded braille music tests for school aged students.[[8]](#endnote-8) In the last twenty years there have been 122 candidates in these annually held tests. 46 of those young musicians took two or more of the five levels, with five taking all five levels. Most of those entering more than once took a level per year. 210 tests have been taken, 39 at the levels Four, Five and Senior Award. Three candidates have during that time sat the Senior Award intended to confirm that the entrant is fully able to learn any music on their chosen instrument, or vocally, from braille music without assistance. One of those candidates, an organist, reached the required standard. All three are still heavily involved in music making.

### In1994 the tests were altered to include performance from memory. Since then the majority of tests have been played on the piano or keyboards but 18 were sung, 13 played on the clarinet, 12 on the flute, 8 on the recorder, four on the violin, two on the tenor horn, two on the tuba and one on the cello.

Looking over time, the entries show consistency, rather than decline, in numbers learning braille music. There were 10 candidates in 1995, with 8 in 2015. In 1995 three attended mainstream schools, in 2015 two. In 1995, 7 candidates entered level one, 2 candidates at level two, 1 candidate at level four, whilst in 2015 4 candidates entered level one, 1 candidate at level two, 2 candidates at level four and 1 at level five. In 1995 there were two winners at level one, one attending a mainstream school and one a special school, one winner at level two and one at level four both attending mainstream schools. One of the winners went on some years later to be a finalist in the first UK X factor TV programme[[9]](#endnote-9). In 2015, there was one winner at level one who attends a special school and is taking GCSE music, one at level two from a mainstream school, one at level four attending a Junior Conservatoire, one at level five attending a mainstream school. Of the 2015 winners, one already has won three major national composition competitions and another has been awarded a place to read music at a prestigious UK university.

Beyond this formal assessment of braille music, there has been a steady sale and loan of the few tutor books for braille music. The most popular book is a piano tutor book which teaches the piano step by step at the same time as braille music, as an instrumental tutor book would teach stave notation. Alongside this, Associated Board of the Royal Schools of Music (ABRSM)[[10]](#endnote-10) theory materials, not intended for graduated braille music study, are popular. (Possessing Grade Five Theory is still the main gateway qualification to proceeding to the higher grades of ABRSM instrumental study.)

RNIB has a downloadable, self-tutored, course for sighted teachers designed to assist them in supporting their music reading students in mainstream schools. There has been consistent, if small, take up of this free course.

### **Braille music and UEB**

At the time of this paper, implementation of UEB into music publications is an ongoing process in the UK, with supportive documentation being produced.

The Music Subject Area of the UK Association for Accessible Formats (UKAAF)[[11]](#endnote-11) is producing guidance. This document is nearing completion, stating how and where UEB is to be used in braille music publications and examination material. Guidance was thought essential for braille music readers, examination candidates, examination boards and producers of braille music.

To give an overview, the guidance comprises sections covering:

● Introduction

● Music signs in a UEB literary context

● Use of UEB for literary English surrounding and within musical scores

●Music theory and examination materials

As the use of Standard English Braille is permitted, alongside UEB, in formal examinations until summer 2017 there is, inevitably, a gradual change.

Consideration will need to be given concerning braille music readers who will know only UEB. With material produced over many years in Standard English Braille, how can they best take advantage of these scores where the reverse process of familiarising themselves with SEB will, to a greater or lesser extent be desirable?

Regardless of switching between UEB and SEB, or vice versa, we believe there are opportunities afforded which should be considered and acted upon for promoting braille music not only to blind people who could benefit, but those who could help and assist potential readers and who might be unaware that braille music exists.

It will be crucial that any initiative encompasses both tried and tested approaches, and harnesses new ways of learning and using braille music which technology offers.

Taking account of work by other ICEB-member countries, might there be added value in a central point where resources could be located or from where information could be sign-posted?

Keeping information up-to-date is an area to be addressed if it is to be effective and of practical use which is not always as easy as it seems.

What are the short-term, medium-term and long-term objectives for consideration? We shall be turning our thinking and actions to these in the coming months.

### **Considering the future**

The move in literary braille in the English speaking world to UEB has given a new opportunity to look at standardising the braille music code further, twenty years on from the last major revision. If further international standardisation can be achieved this should aid work on accurate automatic transcription, particularly where precise electronic files of print originals can be made.

The introduction of UEB gives another opportunity. It could prompt a detailed look at the braille music tutor books available and lead to updating these, acknowledging the need to match braille resources in style to contemporary print tutors, in both print and online.

Over the last ten years there has been a huge move from using hardcopy to using downloads on portable devices (tablets and phones). In terms of the fundamental electronic storage, braille music is the same as ordinary braille, so any portable device displaying braille can display braille music. The fundamental difficulty, though, with current braille display technology, particularly for vocal or keyboard instruments, is that it only shows one line at a time. It will be of great interest to musicians to see how braille display technology develops over the next few years. Electronic copy for rehearsals and performances, and for easy editing in practice sessions, frees musicians from carrying bulky scores around and enables marking up of scores on a par with sighted people using their 2B pencils.

Electronic advances also give opportunities for study on line, without the need to travel to tuition. Whilst many e-courses for sighted people include stave notation, this has yet to be exploited for braillists as the courses are designed as two dimensional, onscreen movies. Braille output to a refreshable braille display though is possible.

Multimedia packages, including musicXML that could be turned accurately into braille music given suitable conversion software, provide the opportunity to synchronise sound and symbol and could be a major incentive to disciplined self-study. Having access to high quality synthesized sound with a limitless supply of repertoire promises an equal availability for the braillist and the sighted musician.

Easier braille music transcription through the use of accurate and detailed technology would enable braillist musicians access to scholarly editions of core repertoire, complete editorial notes and accompanying essays.

Most of the world’s notated music is out of copyright. More electronic storage, currently in musicXML, would make more music potentially available to braille music users.

Braille music is a worldwide issue. Electronic communication has opened the door to operating on a world scale. Proper cataloguing with detail as to the braille music code used in transcription, braille layout(s) and local conventions worldwide, and permissions internationally to exchange encrypted files amongst blind users, could rapidly increase the amount of braille music read. An electronic repository for compositions originated in braille music would not only preserve a unique heritage but also prompt further composition. That current sites sharing out of copyright material offer .brf files brings equal opportunities to braillists, hopefully increasing the number of musicians who are blind making music, particularly with their sighted peers.

3771 words

26 February 2016

1. “Procédé pour ecrire les paroles, la musique et le plain-chant au moyen de points a l’usage des aveugles et dispose pour eux, par L. Braille, répéteur à l’institution Royale des Jeunes Aveugles, Paris, 1829” in the original French [↑](#endnote-ref-1)
2. 2 Institut National des Jeunes Aveugles. This was the first school for the blind in the world, founded in 1786 by Valentin Haüy. The school placed much emphasis on learning through memorisation. The first organ class for blind students was established at the Institute in 1826, and, by 1833, no fewer than fourteen blind students held organist positions in the churches of Paris. The Institute continued to produce large number of successful organists, such as [André Marchal](https://en.wikipedia.org/wiki/Andr%C3%A9_Marchal), [Jean Langlais](https://en.wikipedia.org/wiki/Jean_Langlais), and [Gaston Litaize](https://en.wikipedia.org/wiki/Gaston_Litaize). <http://www.afb.org/louisbraillemuseum/braillegallery.asp?GalleryID=46> accessed 31 Dec 2015

   <https://en.wikipedia.org/wiki/Institut_National_des_Jeunes_Aveugles#Organ_class> accessed 31 Dec 2015 [↑](#endnote-ref-2)
3. 3 For further information on the development of braille music see Pamela Lorimer’s PhD “A critical evaluation of the historical researches carried out in endeavours to make the braille code easier to read and to write” at <http://web.archive.org/web/20120330204406/http://www.braille.org/papers/lorimer/title.html> accessed on 18 February 2016 [↑](#endnote-ref-3)
4. 4 “On 5 May 1870, we adopted braille as the best format for blind people and we published the UK's first key to the braille alphabet and music notation. However, an official code for braille music, ensuring that everybody was writing music using the same braille systems was not developed for roughly another 60 years.” <http://www.rnib.org.uk/about-rnib-who-we-are/history-rnib> accessed on 31 December 2015 [↑](#endnote-ref-4)
5. 5 Print copy available at <https://archive.org/stream/newinternational00bett#page/n1/mode/2up>, accessed on 31 December 2015 [↑](#endnote-ref-5)
6. 6 RNIB established an expert braille music panel and, following the publication of a “key” to braille music in 1922 (again with print copy published by Novello’s) it resolved “Henceforward, therefore, all Braille music issued from embossing presses of the National Institute will be in the style elucidated in this 1922 Key.” [↑](#endnote-ref-6)
7. 7 "Braille" music-notation for the blind,: As arranged by the International Commission, and confirmed by the Congress of Cologne, 1888. Together with recommendations ... music primers and educational series) [Title as at [http://www.amazon.co.uk/Braille-music-notation-blind-International-recommendations/dp/B00089MBZ0 accessed 7 January 2016](http://www.amazon.co.uk/Braille-music-notation-blind-International-recommendations/dp/B00089MBZ0%20accessed%207%20January%202016) ]

   The text on the cover page of the 1922 print version reads:

   “KEY TO THE BRAILLE MUSIC NOTATION

   1922

   WITH SYNOPSIS AND INDEX TOGETHER WITH A FOREWORD BY  
   SIR LANDON RONALD, F.R.A.M.. F.R.C.M.

   (Principal of the Guildhall School of Music, London)

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   BY NOVELLO AND COMPANY, Limited, 100, Wardour Street, London, W.-i. [↑](#endnote-ref-7)
8. 8 See <http://www.rnib.org.uk/braille-and-moon-%E2%80%93-tactile-codes-braille-music/braille-music-awards> accessed on 18 February 2016 [↑](#endnote-ref-8)
9. <https://en.wikipedia.org/wiki/The_X_Factor_(UK_TV_series)> X factor is described as a TV reality show. [↑](#endnote-ref-9)
10. 10 [www.abrsm.org](http://www.abrsm.org) [↑](#endnote-ref-10)
11. 11 [www.ukaaf.org](http://www.ukaaf.org) [↑](#endnote-ref-11)