THE MYSTERY OF THE *ALTHORN (ALTO HORN)*SONATA (1943) BY PAUL HINDEMITH Jennifer Ann Hemken, B.M., M.M.

Dissertation Prepared for the Degree of DOCTOR OF MUSICAL ARTS

UNIVERSITY OF NORTH TEXAS

August 2015

APPROVED:

William Scharnberg, Major Professor Steven Harlos, Committee Member Brian Bowman, Committee Member Benjamin Brand, Committee Member John Holt, Chair of the Department of Instrumental Studies James Scott, Dean of the College of Music Costas Tsatsoulis, Interim Dean of the Toulouse Graduate School Hemken, Jennifer Ann. *The Mystery of the "Althorn (Alto Horn) Sonata" (1943)* by Paul Hindemith. Doctor of Musical Arts (Performance), August 2015, 38 pp., bibliography, 59 titles.

A unique and significant composition, the *Althorn Sonata* by Paul Hindemith contains several enigmas and anomalies: details about the premiere remain unknown; scored for the alto horn, a band instrument of the late nineteenth and early twentieth century, the piece seldom finds itself performed on that instrument; although Hindemith composed his instrumental sonatas as composition exercises, for the instruments he intended to use in his large-scale works, his sonata for alto horn marks an unusual exception; the work evolves through Baroque sonata da chiesa form; a Morse code message from a Renaissance painter appears in the second movement, along with references to numerology; and, after the third movement, the horn player and pianist recite a poem, penned by the composer, which becomes musically depicted in the final movement. Hindemith's apparent fondness, for the art of word play, proves the inspiration for enigmas and anomalies found in this sonata. The key to his mystery lies in plain sight: "Alt" translates as both "alto" and "old."

The purpose of this dissertation is to unveil to the musical world, especially to horn and saxophone players, the several enigmas and anomalies found in Hindemith's *Althorn Sonata*. By exposing the nature and depth of this mystery, it will illuminate the intellectual prowess of Paul Hindemith, elevating his *Althorn Sonata* to a place it deserves in the horn repertoire.

Copyright 2015

by

Jennifer Ann Hemken

TABLE OF CONTENTS

CHAPTER 1 PAUL HINDEMITH 1
Pertinent History1
Compositional Style1
Interest in Early Music2
Late Instrumental Sonatas3
CHAPTER 2 THE ALTHORN SONATA5
Background Information5
Lack of a Premiere6
The Alto Horn and Alternative Instruments7
An Original Poem11
Sonata da Chiesa Form14
Morse Code and a Renaissance Artist16
Word Play20
Connections to Mathis der Maler, Manuel, and Grünewald,
CHAPTER 3 SUMMARY26
APPENDIX PHOTOGRAPHS OF THE ALTHORN AND ITS RELATIVES28
BIBLIOGRAPHY35

CHAPTER 1

PAUL HINDEMITH

Pertinent History

Paul Hindemith (1895-1963), one of the most important and influential composers of the twentieth century, ranked with other musical innovators, such as Igor Stravinsky, Arnold Schönberg, and Bela Bartok. In order to escape the Nazi regime, Hindemith emigrated from his native Germany to Switzerland in 1938. Then, he emigrated from Switzerland to the United States in 1940, where he taught at Yale University. The composer gained American citizenship in 1946, but returned to Switzerland in 1953 to live and teach in Zürich.

Compositional Style

Hindemith composed for a wide variety of media, becoming associated with the terms *Gebrauchsmusik* ("Music for Use") and Neoclassicism. During his lifetime, he received recognition as a prominent educator, plus esteem as an author of pedagogical and theoretical texts. Among other important contributions, Hindemith invented a new system of tonality in which a hierarchy of interval relationships replaced key signatures, considering the perfect fourth and fifth as most important.

Baker's Biographical Dictionary of Musicians states, "His style may be described as a synthesis of modern, Romantic, Classical, Baroque, and other styles, a

combination saved from the stigma of eclecticism only by Hindemith's superlative mastery of technical means."

Interest in Early Music

Perhaps less widely known, Hindemith's involvement with Renaissance and Baroque music exuded a substantial influence on his compositions. While a Professor of Composition at the Hochschule für Musik in Berlin (1927-37), he worked with world-famous early music colleagues, such as cellist Emanuel Feuermann and pianist Artur Schnabel. Years later, as a visiting professor at Yale University, Hindemith founded an early music program, advocating his passion for the application of period instruments. His personal performance career, which had begun as a virtuoso violinist and violist, continued as he championed the Baroque viola d'amore.

Hindemith demonstrated his special interest in the German Renaissance through the subjects of his operas from 1938 and 1957. In *Mathis der Mahler* (1938), he depicted the life and political struggles of Matthias Grünewald (c. 1470–August 31, 1528). He based *Die Harmonie der Welt* (1957) on the life and mathematics of Johannes Kepler (1571-1630).

¹ Nicolas Slonimsky, ed., *The Concise Baker's Biographical Dictionary of Musicians*, 8th ed. (New York: Schirmer Books, 1994), 426-428.

Late Instrumental Sonatas

Perhaps Hindemith's best-known and most performed compositions included a set of twenty-six late instrumental sonatas composed during the years 1935 to 1955. Unlike most composers throughout history, who wrote sonatas for themselves or specific musicians, often on a commission and/or for a specific venue, Hindemith created his late sonatas for three altruistic reasons, 1) to study the technical and musical capabilities of each instrument, 2) to provide excellent sonatas for future performances on the instruments, and 3) to serve as compositional exercises in preparation for his larger-scale works.

In the article, "Paul Hindemith's Late Sonatas: A Documentation from the Letters," Daniel Geldenhuys shares, "moreover, he regarded the sonatas as technical exercises for his large-scale operatic work which had been given the tentative title of *Die Harmonie der Welt.*" As part of a biography about Hindemith, Geoffrey Skelton reports:

His compositions during 1939, apart from a violin concerto commissioned by Mengelberg in Amsterdam, were mainly sonatas. These covered such a wide range of instruments (such as the clarinet, horn, trumpet, and harp), that Willy Strecker was provoked into commenting: "I am willing, as a spur of your imagination," he wrote, "to send you a list of instruments which perhaps escaped your eagle eye." But Hindemith's reply showed that there was nothing artificial in his project of writing solo pieces for all of the instruments of the orchestra in turn. Not only did they fill a gap of existing literature, Hindemith remarked, "They also serve as a technical exercise for the great coup which I hope to bring off next spring: *Die Harmonie der Welt* (that, or something like it will be the Kepler title)."

² Daniel Geldenhuys, "Paul Hindemith's Late Sonatas: A Documentation from the Letters," *Hindemith-Jahrbuch* 19, (1990): 20.

³ Skelton. *Paul Hindemith.* 164.

In *The New Grove Modern Masters: Bartok; Stravinsky; Hindemith,* Ian Kemp remarks about the influence of the Hindemith sonatas, specifically on *Die Harmonie der Welt:* "Hindemith's first ideas for the opera dated from the late 1930s, and although he delayed so much that he eventually composed under pressure, it remained the culmination of his output."⁴

As part of his study of the letters written by Paul Hindemith, Daniel Geldenhuys portrays Hindemith as a composer with many enviable qualities: talent, versatility, productivity, and virtuosic performance ability. Geldenhuys goes on to say that Hindemith displayed an "acute sensitivity toward the potential within each instrument" and an awareness of the specific needs of orchestral musicians, especially those who played wind instruments. He then praises the Hindemith sonata series as an artistic product that sounds pleasing, while it remains challenging to performers. This results from the fact that Hindemith mastered the basic playing technique for many of the wind instruments.⁵

One might ask, "Did Hindemith rehearse or perform on the instruments for which he wrote his sonatas, with his wife at the piano?" In the book, *Selected Letters of Paul Hindemith*, Geoffrey Skelton includes a photograph of Paul Hindemith playing a bell-front German Althorn, showing his wife, Gertrud, at the piano.⁶

⁴ Ian Kemp, "Hindemith, Paul." In *The New Grove Modern Masters: Bartok; Stravinsky; Hindemith* (New York: W.W. Norton and Company, 1984), 227-281.

⁵ Geldenhuys, "Paul Hindemith's Late Sonatas," 35.

⁶ Paul Hindemith, *Selected Letters of Paul Hindemith*, trans. and ed. Geoffrey Skelton (New Haven: Yale University Press, 1995), Illustration 14.

CHAPTER 2

THE ALTHORN SONATA

Background Information

During August and early September of 1943, at the height of World War II,

Hindemith took a vacation from Yale University, traveling to the Berkshire Mountains of Massachusetts. On 29 August, he completed the score to his *Symphonic Metamorphosis*, followed closely by his *Sonata for Althorn and Piano*. The AMP (American Publishing Company) declined to print the *Althorn Sonata*, perhaps mirroring the small market for a sonata composed for an obscure nineteenth-century band instrument. B. Schott finally published the work in 1956, with Hindemith giving his blessing for the use of substitute instruments. The published title read *Sonate für Althorn in Es und Klavier (auch Waldhorn oder Alt-Saxophon)*.

Most horn players have an awareness of the *Althorn Sonata*, and many have heard it in performances or recordings. Few have played the work, however, especially with an alto horn. Since its composition, the *Althorn Sonata* has often been performed by saxophonists, since Hindemith listed saxophone as one of his sanctioned substitute instruments. He may have done so, because the saxophone and alto horn shared a similar history—their family trees both began in the second half of the nineteenth century, both had a fundamental pitch in the key of Eb, and both had an association with the band medium.

⁷ Luther Noss, *Paul Hindemith in the United States* (Urbana, IL: University of Illinois Press, 1989), 121.

⁸ Paul Hindemith, *Sonate für Althorn und Klavier (1943)(auch Waldhorn oder Alt-Saxophon),* (Edition Schott 4635) (London: Schott and Co., Ltd., 1956).

This unique and significant sonata contains several enigmas and anomalies: details about the premiere remain unknown; although written for the alto horn, musicians seldom perform it on that instrument (an outdated instrument manufactured in a variety of configurations); the horn player and pianist recite a poem, penned by the composer, before the last movement; the work progresses through Baroque sonata da chiesa form; in the second movement, most importantly, Hindemith features a message (in Morse code) from a Renaissance painter; and a clue to the *Althorn Sonata* mystery lies in the art of word play.⁹

The purpose of this dissertation is to unveil to the musical world, especially to horn and saxophone players, the mystery of the Hindemith *Althorn Sonata*. I wish to reveal the extent of Hindemith's intellectual prowess and elevate the *Althorn Sonata* to a place it deserves in the horn repertoire. In addition, I hope this document encourages scholars to reexamine other works by Hindemith, looking for further signs of word play, humor, and numerology, plus more hidden connections between the history of music, art, and philosophy.

Lack of a Premiere

No known record, concerning the premiere of the *Althorn Sonata*, survived—either in Hindemith's letters or in historical documents. Speaking of the 1939 Hindemith *Horn Sonata* and the 1943 Hindemith *Althorn Sonata*, Heinz-Jürgen Winkler (Hindemith Institute-Frankfurt) responded to an email inquiry about the premieres of both sonatas.

⁹ Ehrstine, Glenn. *Theater, Culture, and Community in Reformation Bern, 1523-1555.* Leiden: Brill, 2002: 210-211.

In a 12 April 2013 email to William Scharnberg, he wrote: "We do not know when or by whom these pieces had their premieres. According to Dr. Luitgard Schräder, editor of the volume *Sonatas for Wind Instruments* of *Hindemith's Complete Works*, there are no documents (newspaper articles, letters, etc.) reporting on premieres of these sonatas." ¹⁰

Some documentation did survive about the *Sonata for Four Horns*. In a November 1952 letter to Willy Strecker (Hindemith's friend and owner of the B. Schott publishing house), Hindemith wrote the following about the premiere of his *Sonata for Four Horns*: "Please don't grant any first performance rights. Anyone can perform it any way he likes, first or not." Therefore, he gave the impression that he probably felt the same about his *Horn and Althorn Sonatas*.

The Alto Horn and Alternative Instruments

Often, the Hindemith *Althorn Sonata* does not receive recognition as part of the standard horn repertoire. Perhaps this occurs, because by the middle of the twentieth century, musicians considered the Eb alto horn a rather obscure band instrument.

The alto horn came into existence during the 1840s. It claimed the "alto" position in a family of brass instruments which also included soprano, tenor, and bass instruments pitched in Bb and Eb. 12 Musicians often called members of this brass family "saxhorns," because Adolphe Sax, inventor of the Bb and Eb family of saxophones, also in the 1840s, both improved and marketed them. Makers constructed alto horns in a

¹⁰ Hindemith Institute-Frankfurt to Author. Email correspondence to William Scharnberg, 12 April 2013.

¹¹ Geldenhuys, Paul HIndemith's Late Sonatas, 33.

¹² Jeremy Montagu, *Horns and Trumpets of the World: An Illustrated Guide* (Lanham: Bowman and Littlefield, 2014), 159-164.

variety of forms, such as circular, slanted oval, and upright oval, with varying refinement and thickness of metal (see Appendix). Alto horns had (still have) conical bore. Although typically pitched in Eb, some had (still have) a fundamental pitch of F.

The German version of the alto horn, "Althorn," an instrument employed by amateur and military bands since the middle of the nineteenth century, generally has a fundamental pitch of Eb, a conical bore, a bowl-shaped mouthpiece, and an oval or circular configuration. ¹³ In its different forms, the "German Althorn" has the same function as the English tenor horn or the American alto horn (sometimes called the "peck

horn"). 14

Anthony Baines, in *Brass Instruments: Their History and Development,* offers an aside that mentions a rare orchestral inclusion of the alto horn: "E-flat alto, at first also called tenor, the instrument for which Berlioz so charmingly conceived a solo part in *The Trojans* (in the 'Royal Hunt' and subsequently transferred to horn)." Norman Del Mar reports the following with regard to the alto instrument in the saxhorn family:

The next saxhorn in descending order is the alto in Eb, used in both Berlioz's and d'Indy's ensembles, although unlike d'Indy (who does call it "saxhorn alto"), Berlioz actually names it a "saxhorn tenor en Mib." This is otherwise unknown in orchestral literature, but corresponds closely with the *althorn*, an instrument known in military or brass band circles where it often replaces the French horn as an "upright grand." It transposes a major sixth down. ¹⁶

¹³ The Harvard Dictionary of Music, ed. Don Michael Randel, 4th ed. (Cambridge, MA: The Belknap Press of Harvard University Press, 2003), 36.

¹⁴ Scott Whitener, A Complete Guide to Brass, 3rd ed. (Belmont, CA: Schirmer, 2007), 113.

¹⁵ Anthony Baines, *Brass Instruments: Their History and Development* (Mineola, NY: Dover Publications, Inc., 1993), 256-257.

¹⁶ Norman Del Mar, *Anatomy of the Orchestra* (Berkeley: University of California Press, 1983), 333.

Among horn players, a debate revolves around which instrument one should use to play the Althorn Sonata. Some believe it should be played with a standard double "French horn," others believe it should be played with an upright oval alto horn, and others believe it should be played with an upright or oval "German Althorn." At times, the circular "German Althorn" gets confused with the circular mellophone. In Collected Thoughts on Teaching and Learning, Creativity, and Horn Performance, Douglas Hill states, "The Sonata for Althorn in E-flat (1943) by Paul Hindemith exemplifies yet another remarkable composition by that generous composer." Then, he mentions a "rumor" about how Hindemith told John Barrows that he preferred the piece to be played on a double horn (before the invention of the triple horn), instead of the Eb alto horn or the Eb alto saxophone. 17 Scott Whitener and Heinz-Jürgen Winkler defend the "German" Althorn." In A Complete Guide to Brass, Whitener writes, "German alto horns, usually constructed in the traditional oval shape with rotary valves, possess a somewhat sturdier and fuller tone, that being the instrument for which Hindemith composed his 1943 Sonata for Althorn." 18 In the 12 April 2013 email correspondence to William Scharnberg, Winkler adds (speaking of the Althorn Sonata and the oval-shaped "German Althorn"), "As an attachment, you will find a photo showing Hindemith playing an alto horn. So, we can assume that he had this sort of instrument in mind while composing the sonata."19

[.]

¹⁷ Douglas Hill, *Collected Thoughts on Teaching and Learning, Creativity, and Horn Performance* (Van Nuys, CA: Alfred Publishing Company, Inc., 2001), 135.

¹⁸ Scott Whitener, A Complete Guide to Brass, 3rd ed. (Belmont, CA: Schirmer, 2007), 114.

¹⁹ Hindemith Institute-Frankfurt, Email Correspondence to William Scharnberg, 12 April 2013.

Did Hindemith not care which instrument musicians used to play the *Althorn*Sonata? In "Paul Hindemith's Late Sonatas: A Documentation from the Letters," Daniel Geldenhuys gives the following insight:

Hindemith's intense interest in wind instruments urged him to master the technical difficulties and playing skills of many of these instruments....In contradiction to this sensitivity towards the potential of each instrument, Hindemith often suggested that the solo instrument could be replaced by a number of other, diverse instruments. This might indicate that the private performance and enjoyment (by the players) of these sonatas was of more importance to Hindemith than the purist rendering of the original conception in a public performance.²⁰

To remind the reader, the title page of the B. Schott publication of the Hindemith Althorn Sonata reads: Sonate für Althorn in Es und Klavier (Waldhorn oder Alt-Saxophon). Then, it offers an English translation: Sonata for Alto Horn (Mellophone) in Eb and Piano (French Horn or Alto Saxophone). "Waldhorn," one of the instruments sanctioned by Hindemith to play the Althorn Sonata, translates as "forest horn" (a natural horn without valves).

Since Hindemith, or his publisher, translated "Waldhorn" to "French Horn," one can assume that the composer did not expect the *Althorn Sonata* to be performed on a natural horn. By "Mellophone," he meant a circular instrument with valves operated by the right hand and a bell pointing to the left side of the player. The circular mellophone had piston valves, thicker metal, and a smaller bell than the circular "German Althorn."

Hindemith did not refer to the modern marching mellophone when he composed the *Althorn Sonata*—the marching mellophone in F developed from the marching

²⁰ Geldenhuys, 35.

mellophone in G (not employed by drum and bugle corps until the mid-1960s).²¹

Neither did the composer suggest the "mellophonium," featured by Stan Kenton in his recordings from 1960 to 1963—Kenton's big band included a section of four trumpeters, performing on Conn 16E Mellophoniums with cup-shaped mouthpieces."²²

An Original Poem

Paul Hindemith penned a poem, to be read aloud, at the beginning of the fourth movement of the *Althorn Sonata*. Written in German, but tacitly understood to be spoken in the language of the audience, he specified that the horn player pronounce the first stanza, the pianist the second. Throughout his poem, titled *Das Posthorn* (The Post Horn), the composer mused on the short post horn that had announced the arrival of mail in German villages since the Middle Ages—still remaining the logo on German post office buildings and stamps. In *Das Posthorn*, Hindemith lyrically reminisced about "the old" and "the new," while sharing the importance of both in one's life.

Perhaps Hindemith chose the post horn as the subject of his poem, because it triggered nostalgia about his childhood in Germany.²³ At the beginning of the twentieth century, horse-drawn carriages continued to deliver mail throughout the country, and postmen continued to blow signals on short horns, announcing their approach as they travelled from village to village.

²¹ John Q. Ericson, *A Mello Catechism: A Guide to the World of Mellophones and Marching Horns* (Tempe, AZ: Horn Notes Edition, 2007), 3-4.

²² Michael Sparke, *Stan Kenton: This is an Orchestra!* (Denton, TX: University of North Texas Press, 2010), 142-143.

²³ Willie Ruff, "Three Musical Passions of Paul Hindemith," Yale Review 76, no. 3 (1987): 393-394.

Interestingly, on 14 July 1942, just a few months before he wrote the *Althorn Sonata*, Hindemith composed a letter to his wife, Gertrud, about the conception of a poem:

I just went for a swim in the afternoon and otherwise strolled through the meadows in the role of a poet awaiting ideas, wandering from one seat to the next. I've knocked together a few lines. It's going slowly, since beginnings are always difficult, but all the same it is a beginning.²⁴

"Das Posthorn" by Paul Hindemith²⁵

Horn Player:

Tritt uns, den Eiligen, des Hornes Klang nicht (gleich dem Dufte längst verwelkter Blüten, gleich brüchigen Brokats entfärbten Falten gleich mürben Blättern früh vergilbter Bände) als tönender Besuch aus jenen Zeiten nah, da Eile war, wo Pferde im Galopp sich mühten, nicht wo der unterworfne Blitz in Drähten sprang; da man zu leben und zu lernen das Gelände durchjagte, nicht allein die engbedruckten Spalten, Ein mattes Sehnen, wehgelaunt Verlangen entspringt für uns dem Cornucopia.

Pianist:

Nicht deshalb ist das Alte gut, weil es vergangen, das Neue nicht vortrefflich, weil wir mit ihm gehen; und mehr hat keiner je an Glück erfahren, als er befähigt war zu tragen, zu verstehen. An dir ist's, hinter Eile, Lärm und Mannigfalt das Ständige, die Stille, Sinn, Gestalt zurückzufinden und neu zu bewahren.

²⁴ Hindemith, Selected Letters, 182.

²⁵ Hindemith, Sonate für Althorn und Klavier.

English Translation of "Das Posthorn" by Jennifer Hemken

Hornist:

Is not the sounding of the horn to our busy souls
Like the scent of blossoms wilted long ago
Or the discolored folds of musty tapestry
Or crumbling pages of ancient yellowed tomes?
Like a sonorous visit from those ages
Which counted speed by straining horses' gallop
Not by a current of electricity through cables
When to live and learn one ranged the countryside
Not buried in closely printed pages.

The cornucopia's gift calls forth in us a pallid yearning, melancholy longing.

Pianist:

The old is not good, just because it has passed Nor is the new great, because we live in it No one experiences happiness beyond one's comprehension.

Your task it is, amid confusion, rush, and noise To grasp the lasting, calm, and meaningful And finding it anew, to hold and treasure it.

After the poem of the *Althorn Sonata*, Hindemith musically portrayed the message of "Das Posthorn" in the last movement of the piece. For the piano, he composed a very fast, hectic part to represent "the new." In the horn part, which represented "the old," he drafted what (at the time of this publication) appears to be an original folk song-like melody in 6/8 meter.²⁶

²⁶ Walter Salmen, "'AlteTone' und Volksmusik in Kompositionen Paul Hindemith," *Yearbook of the International Folk Music Council* 1, (1969): 121.

One should note that the poem has a connection to the second movement which contains a message in Morse code. "Not by a current of electricity through cables," serves as a reference to messages sent via telegraph wires. In contrast, "Like a sonorous visit from those ages which counted speed by the strained gallop of horses," refers to messages delivered on horseback or in horse-drawn postal carriers.

Since "Das Posthorn" speaks of the post horn, an ancestor of the alto horn, not the saxophone, an artistic dilemma arises when saxophonists perform the *Althorn Sonata*. In the 1984 Schott edition, produced after the death of the composer, an extra part appears for the saxophone. It steals the opening, rapid right-hand melody away from the piano. This contradicts the message of Hindemith's poem, rendering its recitation pointless. The saxophone relates neither to the post horn, nor the alto horn. Therefore, when a saxophone plays the passages that Hindemith composed to musically depict "the old" and "the new," listeners lose the intended imagery of the composer.

Sonata da Chiesa Form

The Hindemith *Althorn Sonata* evolves through an altered version of the four-movement Baroque sonata da chiesa (slow-fast-slow-fast). While the piano part follows the traditional sonata da chiesa form, the horn part does not. As the piano plays a fast, scurrying section in the fourth movement (representing the "new"), the horn plays a slower folk song-like melody (representing the "old"). This puts the horn part in a quasi slow-fast-slow-slow form that includes a lyrical first movement, a "dark" third movement, and a song-like fourth movement (against a scurrying piano part). The frollicking second

movement (the only fast movement for the horn) still ends slowly and quietly—only the fourth movement ends boldly.

Maurice Hinson and Wesley Roberts, in *The Piano in Chamber Ensemble: An Annotated Guide,* compare the form of the *Althorn Sonata* to a string sonata by George Frideric Handel:

Four abbreviated movements, similar to a Handel violin sonata. Ruhig bewegt: lyric, prelude-like. Lebhaft: Sonata-Allegro, elaborate development section. Sehr langsam: ascends to a considerable climax (14 bars only) and leads to "Das Posthorn" (Zweigesprach), then directly to Lebhaft: a fairly extensive text outlines the mood of the movement, in three sections: a fast piano solo, a slower dance-like horn tune, and a recapitulation of these two ideas simultaneously.²⁷

In *A Guide to Musical Styles: From Madrigal to Modern Music*, Douglas Moore explains the sonata da chiesa, comparing it to the sonata da camera, or the partita:

Corelli established the form of the baroque sonata as a four-movement work. It begins with a slow movement, is followed by an allegro in fugal style and a melodious andante in homophonic style, and is concluded by a rapid movement, usually in triple rhythm. This type of sonata was known as the church sonata (sonata da chiesa), because of its serious nature, and because it was frequently performed during church services. In contrast to this were the chamber sonata (sonata da camera) and the instrumental suite, which were groups of dances of various contrasting rhythms. Bach also wrote several sonatas and suites, called partitas, for unaccompanied stringed instruments, violin or cello.²⁸

²⁷ Maurice Hinson and Wesley Roberts, *The Piano in Chamber Ensemble: An Annotated Guide,* 2nd ed. (Bloomington, IN: University of Indiana Press, 2006), 332.

²⁸ Douglas Moore, *A Guide to Musical Styles: From Madrigal to Modern Music* (New York: W.W. Norton and Company, 1962), 56.

Morse Code and a Renaissance Artist

During the second movement of his *Sonata for Althorn and Piano*, Paul Hindemith introduced a rather uncomfortable rhythmic sequence for performers to play. It spelled "NKAW" in Morse code. In a French journal article from the 1990s, Bruno Gousset first mentioned the code, "Hidden in the second movement of the *Althorn Sonata*, in a cryptic signal in Morse: N.K.A.W., letters as common in German as in English, may have a report of the war which in the month of September has its critical phase."²⁹

In Morse code (employed extensively during World War II), a dot equals one unit of time, a dash three units of time.³⁰ From the Morse Code alphabet, "NKAW" sounds as "dash-dot, dash-dot-dash, dot-dash, and dot-dash-dash."

For this author, a search for the meaning of "NKAW" involved detours to a city in French North Africa (Nkaw), a possible Hebrew connection with a tabernacle in *Exodus* from *The Bible*, and the Hebrew "שנאה" translating as "hatred." Finally, this author discovered "NKAW" in the drawings of a sixteenth-century Swiss artist, Niklaus Manuel (Deutsch).³¹

Hindemith may have recognized "NKAW," as scripted by Manuel, as similar to "שנאה" or "hatred" in Hebrew—he did mention hatred in a letter. At the end of January 1940, when it became clear that Hindemith needed to leave Switzerland for his own

²⁹ Bruno Gousset, "Les Sonates Pour Instruments A Vent Et Piano de Paul Hindemith," *Revue Internationale D'Etudes Musicales* 6/7 (1995-1996): 241-242.

³⁰ White River Valley Museum Contributors, "Morse Code History," White River Valley Museum and Mary Olson Farm, http://wrvmuseum.org/morsecodehistory.htm (accessed Month Date, Year)

³¹ Glenn Ehrstine, *Theater, Culture, and Community in Reformation Bern, 15*23-1555 (Leiden: Brill, 2002), 209-210.

safety, his emigration required a special letter of recommendation, so he could travel through British waters as an enemy alien. Sir Adrian Boult provided the letter with help from Hugo Strecker.³² In a personal letter to Hugo Strecker on 2 February 1940, Hindemith expressed his gratitude, and he mentioned "hatred."³³

The documents you enclosed will certainly be of immense help, and I shall embark with a quiet mind....I am very touched that Sir Adrian Boult should have written such a genuinely warm and convincing testimonial for me. In the past years, I have experienced things at home, which have shaken my faith in my fellow beings. Except for your father and a few other friends, absolutely nothing has remained. Here, on the other hand, we have, from the very first, received nothing but good from people we did not even know before, and for whom we brought neither advantages nor disadvantages. And now, at a time when hatred and evil appear to be ruling the world, we have more than once been shown where friends are on whom we can count.

With regard to the strongest possible meaning for "NKAW," Niklaus Manuel lived from 1484 to 1530 in Bern, Switzerland. His father, Emanuel Alleman, changed the family name to Manuel. To remind others that the family had come from Germany (Allemeine, Alemania, Alleman), and to be known as a German artist, Niklaus Manuel often went by the appellation "Deutsch" (from Deutschland). Like Hindemith, four hundred years later, Manuel assumed many professional roles, including playwright, artist, stained-glass designer, and engraver. Much like Matthias Grünewald, the subject of *Mathis der Maler* by Hindemith, Manuel also devoted a large part of his life to helping the Protestant Reformation as a mercenary soldier, writer, and statesman.

In two Manuel drawings, preserved by the Kunstmuseum Basel, one can find "NKAW" on the banderole above the head of the subject—in one case, above a flutist (*Girl with Impaled Hair*). "NKAW" represents "Niemand kann als wüssen" ("No one can know

 ³² Skelton, *Paul Hindemith*,169-170.
 33 Hindemith, 147-148.

everything").³⁴ Glenn Ehrstine describes the use of acronyms by Manuel in *Theater,*Culture, and Community in Reformation Bern, 1523-1555. He documents the meaning of the "NKAW:"

Manuel's artistic development can be generally characterized by the following catch-words: from perception to legibility, from perspective to sign, from image to word....Manuel's incorporation of language in his works parallels this trend towards clarity of statement. His earliest textual additions are of a cryptic nature; they complement an image, but require clarification themselves. The drawing Girl with Impaled Heart (ca. 1510) provides an especially vivid example. Several inscrutable groups of letters appear in the banner above the girl: SNE, NRG, NISM, GGVG, NKAW, SASD, HDNM, and GWS(P). Rather than explicate the image, the abbreviations themselves beg interpretation. Even when two of these encrypted maxims appear in their complete form elsewhere - Gott geb uns Gluck (GGVG; May God grant us good fortune) and



Niemand kann als wüssen (NKAW; No one can know everything), their meaning is still not readily apparent. Only through their appearance in countless depictions of the piercing inconstancy of love, represented by the impaled heart in the drawing of the girl, does it become apparent that the sayings pertain to the uncertain outcome of amorous affairs....Indeed, beyond the acronyms GGVG and NKAW, scholars have been unable to decipher the remaining abbreviations....These cryptic messages appear predominantly in Manuel's private drawings and sketches, suggesting that they were a type of personal code with significance for the artist alone. It has, in fact, been argued that the "nobody" of Niemand kann als wüssen is the artist himself.³⁵

A second documentation for the meaning of "NKAW" can be found in a book titled *The Moment of Self-Portraiture in German Renaissance Art* by Joseph Koerner. Importantly, Koerner connects the saying "Niemand kann als wüssen" to Medieval mock

³⁴ Ehrstine, 210.

³⁵ Ehrstine, 210-211.

sermons, carnival games, and word play. Referring to Niklaus Manuel, Koerner writes:

His personal motto *Niemand kann als wüssen (Nobody can know everything)*, often abbreviated as the letters NKAW, appears in dozens of Manuel's drawings. On a literal level, the phrase admits the limits of human knowledge....The motto also belongs, however, to the language games of the so-called *Nemo sermons*....These mock sermons enjoyed great popularity in the monastic culture of the Middle Ages and in the carnival life and popular literature of the early modern period. By the sixteenth century in Germany and Switzerland, the figure of *Niemann* or *Niemand* had become a character in printed broadsides and plays with figures like Pfaff von Kalenberg and Eulenspiegel. These carnivalesque games of negation focus on a hero, "Nobody," who is at once everything and nothing.³⁶

A third documentation for the meaning of "NKAW" comes from a German art book titled *Niklaus Manuel* by Daniel Baud-Bovy. The author refers to private scrolls which Niklaus Manuel kept in his desk drawers during the 1500s—a common practice for painters of that era when not working on their easels. Baud-Bovy explains that, in a drawing of a mysterious and seductive flute player with flowing hair, the acronym "NKAW" appears on a banderole above the delicate head of the *Liblingsspruches Anfangslettern* of Manuel. In this case, the author translates the letters "NKAW" as "Niemand kann alles wissen," instead of "Niemand kann als wüssen."

In another context, Hindemith may have referred to "NKAW" ("No one can know everything") in a letter from 30 January 1940, just before he left Switzerland to immigrate to the United States. He wrote: "I am leaving on Sunday. It is true that, these

³⁶ Joseph Leo Koerner, *The Moment of Self-Portraiture in German Renaissance Art* (Chicago: The University of Chicago Press, 1993), 418-419.

days, we cannot know everything that is happening, but by all appearances, your fears would seem to be unfounded."³⁷

Word Play

In the opinion of this author, Hindemith approached the composition of the *Althorn Sonata* as an intellectual diversion. He implemented "Alt" as both the impetus and the clue to his puzzle. Perhaps the double meaning of "Althorn" ("old horn" and "alto horn") caught the imagination of the composer, and he let it run in several directions. Hindemith wrote the piece for an "old" instrument, and he packaged it in an old Baroque form. During a poem, specifically written for the *Althorn Sonata*, Hindemith reminisced about a Medieval German relative of the alto horn, the post horn. Within his poem, he compared the "old" and the "new," and he referred to the Morse code form of communication. Using the Morse code system, Hindemith incorporated an acronym, coined by Niklaus Manuel Deutsch (a brother in word play) which dated from the German Renaissance.

In *Master Drawings Close-Up*, Julian Brooks writes about the drawing *The Mocking of Christ* (1513-14) by Niklaus Manuel, and he speculates about the use of word play by the artist: "Manuel combined his artistic activities with side work as a mercenary soldier, and he signed the drawing, with the monogram of his initials, above a Swiss dagger (or *Schweizerdolch*, probably a word play on his name)."³⁸

³⁷ Hindemith, 147.

³⁸ Julian Brooks, *Master Drawings Close-Up* (Los Angeles, CA: The J. Paul Getty Museum, 2010), 20.

Interestingly, the statement, "Niemand kann als wüssen," boasts a possible double interpretation. It alludes to an intellectual game with which scholars and philosophers have toyed since the Middle Ages. The statement can be read, "No one is capable of knowing everything." Or, if we assume that "No One" represents an entity, "Saint No One *can* know everything."

In Comic Drama in the Low Countries c. 1450-1560: A Critical Anthology, Ben
Parsons and Bas Jongenelen provide a description of Saint Nobody and the importance
of "Niemand" in learned word games during that time period:

Saint Nobody first appears in the *Historia de Nemine* (thirteenth century), which is in many respects the prototype of all later mock-hagiography. The *Historia* is not in fact a mock-sermon in the strict sense, but more of an academic exercise: as Martha Bayless writes, it is deeply rooted in medieval intellectual life, satirising contemporary exegetic practices. The *Historia* gathers together instances of the word *nemo* (nobody) from scripture and patristic sources, and assembles them to form a biography for this holy man. It thus reports that Nemo was honoured by Jesus, who ordered his followers to "salute Nobody by thy way" (Luke 10.4), and declares that he is immortal, since Ecclesiastes 9.4 attests that "Nobody liveth forever." Even though such learned word-games are quite far removed from the vernacular mock-sermons, as lan Russell in particular has observed, Nemo was drawn into the *sermons joyeux* at an early date.³⁹

Did Hindemith compose his *Althorn Sonata* for "No One?" Perhaps he envisioned the "German Althorn" as both the "old horn" and the "nobody" of the brass family? Did he also sanction the *Althorn Sonata* for saxophonists, because in his mind, it represented the "nobody" of the woodwind family? Perhaps Hindemith viewed himself as a modern "Niemand?"

³⁹ Comic Drama in the Low Countries c. 1450-1560: A Critical Anthology, ed. and trans. Ben Parsons and Bas Jongenelen (Cambridge: D.S. Brewer, 2012), 67.

Connections to *Mathis der Maler*, Manuel, and Grünewald,

Paul Hindemith displayed a lifelong interest in the visual arts. For example, starting in December of 1915, he enjoyed a long friendship with Fred and Emma Lübbecke. They met at a combined art history lecture/ string quartet concert, and Hindemith later performed some of his own works with Emma Lübbecke at the piano. During the 1915 event, Dr. Fred Lübbecke gave a lecture on art history that included slides of the Isenheim Altarpiece by Matthias Grünewald (later the subject of *Mathis der Maler*), and Hindemith played second violin in the string quartet. Toward the beginning of World War II, on 6 December 1939, four years before the composition of the *Althorn Sonata*, Hindemith expressed the following thoughts to Fred and Emma Lübbecke in a letter (a probable seed to the *Althorn Sonata*):

If one can busy oneself lovingly with the things of the past, and in addition create things that will one day belong themselves to those periods of the past most worthy of admiration and continued attention, the present disturbances surrounding us can assume gigantic proportions, they can smash mountains to pieces, but they cannot damage the tiny seeds.⁴¹

Scholars know that Hindemith enjoyed visiting art museums when he traveled—the following account appears in another published letter:

In Turin, it snowed without stopping for three days, the snow lay around just like Leningrad. The grey weather, the endless wide streets, and with it the oppressive warlike atmosphere, etc., etc., it was all reminiscent of Russia. I visited the picture galleries, it was impossible in that weather to do anything else. The rooms are very fine, though most of the pictures are hung so that they dazzle you, and in many cases are hung in unlit corners, so that they were often unidentifiable in the prevailing gloom. All the same, I saw a few really magnificent

⁴⁰ Skelton, 45-46.

⁴¹ Hindemith, 143.

Van Dycks, Brueghels, also some fine early Italians, fine Rembrandts, and Holbein's Erasmus of Rotterdam. The visit was at any rate worthwhile.⁴²

The Kunstmuseum Basel (Switzerland) currently houses the paintings and drawings of Niklaus Manuel Deutsch, and one can assume that Hindemith studied them before he immigrated to the United States, especially since they appear alongside those of sixteenth-century painter, Matthias Grünewald (subject of *Mathis der Maler* by Hindemith).

Niklaus Manuel Deutsch and Matthias Grünewald share a connection through the inspiration of Saint Anthony in their work (the Grünewald *Isenheim Altarpiece* includes scenes of Saint Anthony). This promotes further connection between Manuel and Hindemith. In *The Temptation of Paul Hindemith: Mathis der Maler as a Spiritual Testimony*, Siglind Bruhn states:

The picturesque nature of the stories, telling about the temptation of Saint Anthony, has fascinated and inspired artists throughout the last five centuries, and they have found many highly imaginary ways to depict what impressed or haunted them most. In book illustrations, etchings, and woodcuts of the Middle Ages, the temptation of Saint Antony was a very popular topic....Later, during the Renaissance, both artists of the Italian and the Northern schools took up the topic.... Dutch and Flemish artists who painted the subject include Hieronymous Bosch (ca. 1450-1516), Quentin Massys (1466-1530), Jan Willems de Cock (1480-1527?), Niklaus Manuel Deutsch (1484-1520/30)....⁴³

In another section of the same book, Bruhn compares Hindemith to the anchorite Saint Anthony: like Anthony, Hindemith educated himself to a state of wisdom, superior to the most formally trained philosophers; he taught himself Latin, while he worked as a professor in Berlin during his thirties; letters to his wife revealed a vast and expanding

-

⁴² Ibid., 89-90.

⁴³ Bruhn, 107-108.

knowledge of literature, art, and critical writings; through daily diligence, he transformed himself into a well-read and highly cultured man.⁴⁴

The Larousse Encyclopedia of Renaissance and Baroque Art documents another association between Matthias Grünewald and Niklaus Manuel Deutsch:

Grünewald had no artistic followers; but echoes of his art are nevertheless found in the work of Jorg Ratgeb of Stuttgart (d. 1526), in that of Dürer's pupil from Alsace, Hans Baldung Grien (d. 1545; altarpiece in the cathedral of Freiburg im Breisgau); with those are connected the Swiss painters, Urs Graf, Niklaus Manuel Deutsch (d. 1530) and H. Leu.⁴⁵

A numerological connection between *Mathis der Maler* and the *Althorn Sonata* proves noteworthy (number play). With regard to the number eleven, the opera libretto develops through eleven sections, and the chorale melody (from the "Angelic Concert" overture) repeats eleven times in the opera. "Angelic Concert" includes an eleven-tone row, written as an ostinato for the horns under the Gregorian chant *Lauda Sion Salvatorem (Praise Zion to the Savior)*. Similarly, in the piano part of the second movement of the *Althorn Sonata*, the "NKAW" isorhythm sounds eleven times. With respect to the number five, the intermediate scene of the Isenheim Altarpiece has five scenes, and Acts Two and Five of *Mathis der Maler* have five scenes. Correspondingly, in the second movement of the *Althorn Sonata*, the "NKAW" isorhythm occurs five times in the alto horn part.

Although this author does not yet have proof that Hindemith saw the drawings of Manuel, while he visited or lived in Switzerland, there can be little doubt that he did. It

⁴⁴ Siglind Bruhn. *The Temptation of Paul Hindemith: Mathis der Maler as a Spiritual Testimony* (Stuyvesant, NY: Pendragon Press, 1998), 35-36.

⁴⁵ Larousse Encyclopedia of Renaissance and Baroque Art, ed. René Huyghe (New York: Prometheus Press, 1958), 175.

appears that Hindemith must have seen the acronym, "NKAW," in drawings of Manuel, and he must have recognized Manuel as a cohort in the art of word play.

CHAPTER 3

SUMMARY

Paul Hindemith composed a series of late sonatas between the years 1935 and 1955. These sonatas provided a means to practice writing for specific instruments, while he looked ahead to larger-scale works. As Hindemith acquired a more thorough knowledge of individual instruments, he wrote new repertoire for them. With regard to the *Horn and Althorn Sonatas*, it appears that the composer wanted all hornists to have the experience of a "first performance." In fact, the premieres of many of his late sonatas escaped record.

The *Althorn Sonata* won a place of special consideration in the Hindemith late sonata repertoire. While Hindemith experimented with the German version of the alto horn, he probably did not intend to include that instrument in the scoring of his larger works. The composer disguised a message (in Morse code) from a Renaissance painter during the counterpoint of the second movement. He inserted an original poem, to be recited by the performers, at the beginning of the fourth movement. Therefore, in the opinion of this author, Hindemith approached the project as an intellectual game, creating a puzzle for future performers and audiences. Perhaps the composer viewed his diversion as an end in itself, having little or no interest in whether it found performance. Most likely, he did not anticipate that his *Althorn Sonata* would become the saxophonist's "Hindemith Sonata." Either his publisher did not understand the connection between the poem of the *Althorn Sonata* and the word painting of the last movement, or the publisher deliberately chose to ignore the intended aural imagery—in anticipation of potential sales.

The mystery of the Hindemith *Althorn Sonata* remained hidden and locked for over seventy years. Underneath its solid craftsmanship and immediate energy, the work continued to conceal an array of enigmas and anomalies. Ironically, Hindemith planted the key to opening his box of historical and philosophical references, numerology, and intellectual word play, in plain sight: "Alt."

APPENDIX PHOTOGRAPHS OF THE ALTHORN AND ITS RELATIVES



1947 Musica Steyr circular Eb Althorn



1950s Lignatone Bb Baritone (top)
1957 Amati Kraslice oval Eb Althorn (bottom)



1920s Abbott Manufacturing Company Alto Horn



1920s H.N. White Eb circular Mellophone (left)

1906 York and Sons F circular Mellophone (right)



1979 Conn 16E Mellophonium



1951 Boosey & Hawkes straight English Posthorn(top)

German Fürst Pless Jagdhorn (Hunting Horn)(date unknown)(bottom)

BIBLIOGRAPHY

Books about Hindemith

- Kemp, Ian. Hindemith. Oxford: Oxford University Press, 1970.
- Noss, Luther. *Paul Hindemith in the United States.* Urbana: University of Illinois Press, 1989.
- Selected Letters of Paul Hindemith. Edited and Translated by Geoffrey Skelton. New and London: Yale University Press, 1995.
- Skelton, Geoffrey. *Paul Hindemith: The Man Behind the Music: A Biography.* New York and London: Crescendo and Gollancz, 1975.

Books about Instruments

- Baines, Anthony. *Brass Instruments: Their History and Development.* Mineola, NY: Dover Publications, Inc., 1993.
- The Cambridge Companion to Brass Instruments. Edited by Trevor Herbert and John Wallace. Cambridge: Cambridge University Press, 2002.
- Del Mar, Norman. *Anatomy of the Orchestra*. Berkeley and Los Angeles: University of California Press, 1983.
- Ericson, John Q. A Mello Catechism: A Guide to the World of Mellophones and Marching Horns. Tempe, AZ: Horn Notes Edition, 2007.
- Hill, Douglas. Collected Thoughts on Teaching and Learning, Creativity, and Horn Performance. Van Nuys, CA: Alfred Publishing Co., Inc., 2001.
- Hinson, Maurice and Wesley Roberts. *The Piano in Chamber Ensemble: An Annotated Guide.* Second Edition. Bloomington and Indianapolis: University of Indiana Press, 2006.
- Montagu, Jeremy. Horns and Trumpets of the World: An Illustrated Guide. Lanham: Bowman and Littlefield, 2014.
- Sparke, Michael. Stan Kenton: This is an Orchestra! Denton, TX: University of North Texas Press, 2010: 142-143.

Whitener, Scott. A Complete Guide to Brass. Third Edition. Belmont, CA: Schirmer, 2007.

Dissertations

- Hansen, Jeremy Christian. A Creative and Pedagogical Approach to Hindemith's Music for Horn and Piano with Thirty Progressive Etudes. The University of Iowa, ProQuest, UMI Dissertations Publishing, 2009. 3356216.
- O'Connor, Edward Joseph Patrick. *A Recital and a Study of Paul Hindemith's Style in his Compositions for Solo Horn.* Columbia University, ProQuest, UMI Dissertations Publishing, 1967. 6712700.
- Payne, Dorothy Katherine. *The Accompanied Wind Sonatas of Hindemith: Studies in Tonal Counterpoint.* Dissertation for the Ph.D. in Theory, Eastman School of Music, 1974. Ann Arbor, MI: University Microfilms International, 1984.
- Wylie, Karen. *Gebrauchsmusik in Paul Hindemith's Works for Saxophone.*University of Houston, ProQuest, UMI Dissertations Publishing, 2002. 3064118.

Essays

- Geldenhuys, Daniel. *Paul Hindemith's Late Sonatas: A Documentation from the Letters*. <u>Hindemith-Jahrbuch. Annales Hindemith</u> 19 (1990): 20-38.
- Gousset, Bruno. Les Sonates Pour Instruments A Vent Et Piano De Paul Hindemith.

 Revue Internationale D'Etudes Musicales 6/7 (1995-1996): 233-257.
- Kemp, Ian. Hindemith, Paul. In *The New Grove Modern Masters: Bartok; Stravinsky; Hindemith.* (New York: W.W. Norton and Company, 1980), 227-281.
- Ruff, Willie. *Three Musical Passions of Paul Hindemith.* Yale Review 76, no. 3 (Spring 1987): 386-410.
- Salmen, Walter. "Alte Töne" und Volksmusik in Kompositionen Paul Hindemith. Yearbook of the International Folk Music Council 1 (1969): 89-122.

Methodology Books

- Baud-Bovy, Daniel. *Niklaus Manuel.* Die Schätze der Schweizerischen Malerkunst: Kunstverlag Albert Skim.
- Bruhn, Siglind. *The Temptation of Paul Hindemith: "Mathis der Maler" as a Spiritual Testimony.* Stuyvesant, NY: Pendragon Press, 1998.
- Brooks, Julian. *Master Drawings Close-Up.* Los Angeles, CA: The J. Paul Getty Museum, 2010.
- Collins German Dictionary. Seventh Edition. New York: HarperCollins, 2007.
- Comic Drama in the Low Countries c. 1450-1560: A Critical Anthology. Edited and Translated by Ben Parsons and Bas Jongenelen. Cambridge: D.S. Brewer, 2012.
- The Concise Baker's Biographical Dictionary of Musicians. Edited by Nicolas Slonimsky. Eighth Edition. New York: Schirmer Books, 1994.
- Ehrstine, Glenn. *Theater, Culture, and Community in Reformation Bern, 1523-1555.* Leiden: Brill, 2002.
- The Harvard Dictionary of Music. Edited by Don Michael Randel. Fourth Edition. Cambridge, MA and London: The Belknap Press of Harvard University, 2003.
- Kennedy, Michael and Joyce Bourne. *The Concise Oxford Dictionary of Music.* Fifth Edition. Oxford: Oxford University Press, 2007.
- Larousse Encyclopedia of Renaissance and Baroque Art. Edited by René Huyghe. New York: Prometheus Press, 1958.
- Klett's Modern German and English Dictionary. Edited by Erich Weis. Lincolnwood, IL: National Textbook Company, 1984.
- Koerner, Joseph Leo. *The Moment of Self-Portraiture in German Renaissance Art.* Chicago and London: University of Chicago Press, 1993.
- Moore, Douglas. From Madrigal to Modern Music: A Guide to Musical Styles. New York: W.W. Norton and Company, Inc., 1962.
- Thiessen, Jack. *Mennonite Low German Dictionary*. Madison, WI: The Board of Regents of the University of Wisconsin System, 2003.

 Musical Scores

Burger, Matthias. Schule für Tenorhorn oder Althorn. Mainz: Schott, 1962.

Hindemith, Paul. *Mathis der Mahler: Symphony.* London: Ernst Eulenberg Ltd., 1984.

Hindemith, Paul. Sonate für Althorn in Es und Klavier (1943) (auch Waldhorn oder Alt-Saxophon): Edition Schott 4635. London: Schott and Co., Ltd., 1956.

Hindemith, Paul. Sonate für Althorn in Es und Klavier (1943)(Waldhorn oder Alt-Saxophon). Renewed Edition. Mainz: Schott Music GmbH and Co. KG, 1984.

Websites

Http://britannica.com/EBchecked/topic/363106/Niklaus-Manuel

Http://commons.wikimedia.org/wiki/Category:Niklaus_Manuel

Http://en.wikipedia.org/wiki/Niklaus_Manuel_Deutsch_I

Http://faculty.gordon.edu/leder-exoduslearning-crj

Http://freetranslation.com

Http://gebr-alexander.com

Http://geoview.info/nkaw

Http://kunstmuseumbasel.ch

Http://robbstewart.com/Museum/19thCentury/GermanPostHorn.

Http://scoutscan.com/cub/morsecode.html

Http://translate.google.com

Http://wrvmuseum.org/morsecodehisory.html