

BACH ON THOROUGH-BASS REALIZATION

NOTE

Practically all ensemble music of Bach's time was furnished with a *basso continuo*, a figured-bass line over which an accompaniment was improvised by an instrument capable of producing harmonies, such as the organ, harpsichord, lute, or viola da gamba. During the seventeenth century, the character of this accompaniment had considerably changed. Originally the entire accompaniment was pitched very low and the left hand of the player on a keyboard instrument frequently took over two and even three parts; in general, the accompaniment was played in four parts, but this number was by no means strictly adhered to.¹

At Bach's time, the accompaniment was usually executed in such manner that the left hand played only the bass and the right hand the other parts. The register of the entire accompaniment had risen, and while it was still considered best to keep the top voice below e", one was allowed to go up to g", or even, on rare occasions, to a".

Accompaniment in more than four parts was occasionally used, particularly when a large body of instruments was accompanied by a harpsichord; Kittel's reminiscence² evidently refers to instances where Bach turned the regular four-part accompaniment played by one of his pupils into a many-voiced one. In one instance, however, three-part accompaniment was generally recommended—whenever series of consecutive chords of the sixth occurred.

Bach twice assembled rules of thorough-bass realization. The first set of rules appears in the larger and later of the two Clavier Books for Anna Magdalena Bach. The rules are mostly written down in her hand, probably from Bach's dictation. Toward the end, however, Bach's own hand appears. These rules are of a rather elementary nature, and may still serve very well as an introduction to the field for a beginner.

Much more elaborate is a second manuscript containing rules and exercises of figured-bass realization by Bach. This manuscript was owned by Johann Peter Kellner; he presumably received it from a pupil of Bach's. Various mistakes indicate that it was also taken down from dictation. Kellner was one of those musicians who assiduously studied Bach's work without ever actually becoming one of his direct pupils. In his autobiography,³ he wrote: "I had formerly partly seen and partly heard very much of a great master of music. I found exceeding pleasure in his work. I mean the late Capellmeister Bach in Leipzig. I longed for the acquaintance of this excellent man. And I was, in fact, fortunate enough to enjoy the

¹ See the exhaustive treatise by F. T. Arnold, *The Art of Accompaniment from a Thorough-Bass*, London, 1931.

² Given in Section V.

³ In Marpurg's *Historisch-Kritische Beyträge zur Aufnahme der Musik*, Vol. I, Part V, Berlin, 1755, p. 444.

same." He faithfully copied a considerable number of Bach's works; and his copies invariably rank among the most accurate.

Kellner's manuscript may be described as consisting of four sections. The first, which is given here in translation, contains a "Brief Instruction in the so-called Thorough Bass (*General Bass*)"; it repeats, in slightly more concise and yet more comprehensive form, the rules given in Anna Magdalena's Clavier Book. The second section is headed "Detailed Instruction in the Thorough Bass." It consists almost entirely of excerpts from the *Musicalische Handleitung* by Friedrich Erhard Niedt, first published at Hamburg in 1700, but reprinted several times. Thereafter a number of examples are given with the heading: "To give further enlightenment, the following examples have been written out." Eleven of these, mostly in short two-part form, seem to be taken from songs and chorales of the time; five more represent fugue expositions which recall the *canzoni per sonar* of the mid-seventeenth century. Then follow the "Principles of Four-Part Playing" (*Grundsätze zum Enquatre Spielen*),⁴ which are also given below. They consist of fourteen sequences and a set of cadence formulas. The sequences are all written out in a manner corresponding to the first two, which are printed here in full—ending first on the tonic, repeating the basic line in the dominant key, then in the relative minor, and finally returning with a *da capo* to the first line. The rules accompanying these sequences have a peculiar significance in the history of figured-bass realization. They show how to treat series of sixth-chords and similar progressions hard to handle in four-part playing. The rules thus fill the one gap left in the contemporary theory of thorough-bass accompaniment, by enabling the student to keep up four-part harmony even where the textbooks of the time allowed or actually recommended a striking inconsistency: the omission of a part.

"SOME MOST NECESSARY RULES OF THOROUGH BASS BY J. S. B."

[1725]

Scalae

The scale of the major 3rd is; a tone [tonic], 2nd a whole tone, 3rd a whole, 4th a half, 5th a whole, 6th a whole tone, 7th a whole, 8ve a half tone;⁵ the scale of the minor 3rd is: a tone [tonic], 2nd a whole tone, 3rd a half, 4th a whole, 5th a whole, 6th a half, 7th a whole, 8ve a whole; hence the following rule can be derived: the 2nd is large in both scales, the 4th always small [*sic*], the 5th and 8ve perfect, and the 6th and 7th are like the 3rd.

The chord consists of 3 tones, namely the 3rd, whether large or small, the 5th, and the 8ve; e.g., for C, C-E-G.

⁴ The examples are written in groups of four eighth-notes so that the player may feel entitled to change position within any chord; this has induced various writers, including the translators of Spitta, and even Arnold, to take *en quatre* as meaning "in groups of four notes."

⁵ In the original, the interval between the fifth and sixth is erroneously given as a half tone, that between the seventh and eighth as a whole tone.

Some Rules of Thorough Bass

(1) Every principal note has its own chord, whether natural (*eigenthümlich*) or borrowed.

(2) The natural chord of a fundamental [or bass] note consists of the 3rd, 5th, and 8ve.

N.B. Of these three intervals none can be altered except the 3rd, which can be large or small, and is accordingly called major or minor.

(3) A borrowed chord is formed by other intervals than the usual ones appearing over the fundamental note:

	6	6	6	5	7	9	
c.g.	4,	3,	5,	4,	5,	7,	etc.
	2	6	3	8	3	3	

(4) A \sharp or \flat alone over the note means that for a \sharp one plays the major 3rd and for a \flat the minor 3rd, but the other intervals remain unchanged.

(5) A 5 alone or an 8 alone mean the whole chord.

(6) A 6 alone is accompanied in three ways: (1) with the 3rd and the 8ve; (2) with the 3rd doubled; (3) with the 6th doubled and the 3rd.

N.B. When the major 6th and minor 3rd both appear over the note, the 6th must not be doubled because it sounds bad; instead, the 8ve and the 3rd must be added.

(7) 2 over a note is accompanied by the 5th doubled, and now and then by both the 4th and the 5th; and not seldom occasionally [*sic*] [also with the 4th and 6th].⁶

(8) The ordinary 4th, especially when it is followed by the 3rd, is combined with the 5th and 8ve. But if there is a line through the 4 [4, indicating an augmented 4th], the 2nd and 6th are played with it.

(9) The 7th is also accompanied in three ways: (1) with the 3rd and 5th; (2) with the 3rd and 8ve; (3) the 3rd is doubled.

(10) The 9th seems to have an identity with the 2nd, and is in itself a doubling of the 2nd, but the difference is that it requires a completely different accompaniment, namely, the 3rd and 5th, or occasionally the 6th instead of the 5th, but very seldom.

(11) With $\frac{4}{2}$ the 6th is played, or occasionally the 5th instead of the 6th.

(12) With $\frac{5}{4}$ the 8ve is played, and the 4th resolves downward to the 3rd.

(13) With $\frac{6}{5}$ the 3rd is played, whether it be major or minor.

(14) With $\frac{7}{5}$ the 3rd is played.

(15) With $\frac{9}{7}$ the 3rd is played.

The other precautions that must be observed will explain themselves better in oral instruction than in writing.

⁶In the original there is a blank space at this point; probably Bach meant to add what is given here.

"THE PRECEPTS AND PRINCIPLES
 of the
 Royal Court Composer and Capellmeister as well as
Director Musices and Cantor of the Thomas-Schule
 Mr. Johann Sebastian Bach
 at Leipzig
 for Playing a Thorough Bass, or Accompanying, in Four Parts
 for
 his Scholars in Music
 1738"

Figures	6	4 3	7 6	7	9 8	9	6 5	6 5 4 3	b 7	4 3	4	5b	Without any figures	{ 8 — 5 — 3
Inner Voices	3	5	3	3	3	3	3	8	3	♯	2	3		
Reinforce- ment Voices	3, 8, 6	8	8, 3	5, 8	5	5	—	—	5, 5b	—	6	6		

Brief Instruction in the so-called Thorough Bass

The *figures* that occur in *Thorough Bass* are the following nine: 2, 3, 4, 5b, 5, 6, 7, 8, 9.

These are divided into *consonances* and *dissonances*. Four of them are *consonances*, namely: 3, 5, 6, 8.

These are further divided into *perfect* and *imperfect*.

The *perfect consonances* are: 5th and 8ve; and the *imperfect* are two: namely 3rd and 6th.

The other five are dissonances, namely: 2, 4, 5b, 7, 9.

When there is no number or *figure* over a note, one plays the triad (*Accord*) consisting of 3, 5, and 8.

But the 5 and the 8, lying in the upper part of the triad, must not be played twice [in succession]; otherwise 5ths and 8ves will follow each other, which are the greatest mistakes in music.

N.B. One alternates.

At times one also finds a 3, 5, or 8 over a note; this ordinarily means the triad, but it may also be understood to mean that the 3, 5, or 8 is to be played at the top.

Now follow the figures with which the third is to be played:

With a $7 \quad 6 \quad 5 \quad 6 \quad 6 \quad 5 \quad 6 \quad 6 \quad 7 \quad b7 \quad 8 \quad 8 \quad 9 \quad 8$ the 3 is played.
 $5 \quad 5b \quad 5 \quad 5b \quad 7 \quad 6 \quad 7 \quad 6$

N.B. So as not to have to memorize the rule here given, note only the following: With every 6 or 7, with or without other figures, the 3 is played.

Except $\frac{6}{4}$, which resolves to $\frac{5}{3}$, with which an 8 is to be played, as will be seen below.

With $\frac{7}{2}$ nothing else is played.

Now follow those figures which always resolve into ordinary triads:

With 9 8 one plays 3 and 5.

With 4 3 one plays 5 and 8.

With $\frac{6}{4} \frac{5}{3}$ one plays 8.

With $\frac{9}{4} \frac{8}{3}$ one plays 5.

N.B. So as not to have to memorize this rule either, note the following: Those parts of the triad which are not included in the [figures indicating the] resolution are played with the preceding figures.

Now follow those figures which must each be memorized separately:

With $\frac{4}{2}$ one plays 6.

With $\frac{4}{8}$ one also plays 6.

With $b7$, when there is also a \sharp in front of the bass note, one plays 3 and 5.

With $5b$ one plays also the 6.

A \sharp or \natural means that one is to play a major 3rd, and a b that one is to play a minor 3rd.

The 4 3, $5b \frac{6}{5}$, 7, and 9 must (1) regularly be present already in the preceding chord; (2) remain in the same voice; (3) be resolved one step downwards.

Principles of Four-Part Playing

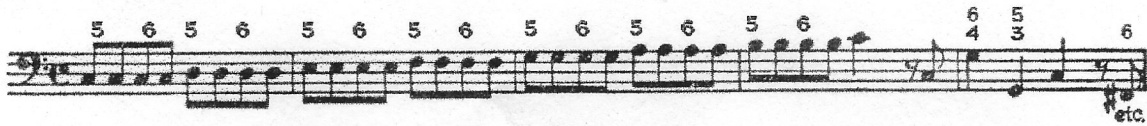
1. Descending sequence of 6 chords

In the first 6 chord, the 6 may be doubled, but the 8 used [i.e., doubled] in the second, continuing thus to the end.

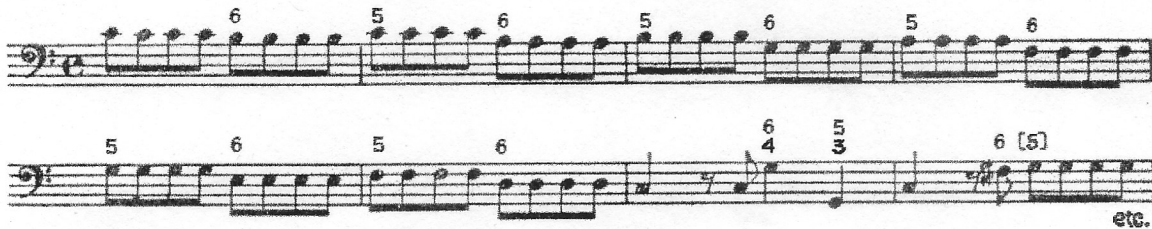
2. Ascending sequence of 6 chords

The 8 may be taken with the first 6, and the second 6 doubled.

3. 5 6 in sequence



One should begin with the right hand in a good high position and proceed *per motum contrarium* [in contrary motion]. With the 6 take the 8.

4. [5 and 6 in alternation] ⁷

The 6 may be doubled, or the 8 taken with it.
Nota bene that the 3 should always be on top.

5. 7 6 in sequence. N.B. Dissonances are never doubled.



The 5 may be taken with the 7 and the 8 with the following 6; or the 6 may be doubled. In a case when the 5 could not be played with the 7, the 8 may also be used.

6. The 7 resolving into 3



To treat this progression in four parts, the 5 or 8 may be taken with the 7.

⁷ It should be noted that in this example, as in the following ones, the second presentation of the basic line begins on the third beat, the G of the last measure quoted corresponding to the opening C.

7. The 7 resolving into 3 in such manner that the 3 played with the 7 forms a new 7 and thus continuously

With the first 7 the 5 or 8 may be used. If the 5 is used with the first 7, the 8 should be taken with the second 7, and *vice versa*.

8. The $\frac{6}{5}$ resolving into 3. This setting is in itself four part.

The 8 to be taken with the preceding 6, for if the 6 is doubled, two 5's always follow each other; and this applies to the following examples as well.

9. The diminished 5. As often as the progression permits, this is treated like the above.

10. The 4 3

Exercise 10 consists of two staves of music. The first staff shows a sequence of chords: 6, 5/6, 4 3, 6 5b, 4 3, 6/5 [sic], 4 3. The second staff continues the sequence: 5/6, 4 3, 5/6, 4 3, 6 4, 5/6, 6, etc.

With the help of this $\frac{6}{5}$, various other chords can also be employed (that is, in sequence) and worked out through the common cadences in the same manner as the 4 3.

11. The 9 resolving into 8 can also well be continued by $\frac{6}{5}$.

Exercise 11 consists of two staves of music. The first staff shows a sequence of chords: 6, 6/5, 9 8, 5/6, 9 8, 5/6, 9 8. The second staff continues the sequence: 5/6, 9 8, 5/6, 9 8, 6 4, 5/6, 6, etc.

12. The $\frac{9}{4} \frac{8}{3}$ can be made into a sequence through the $\frac{6}{5}$.

Exercise 12 consists of two staves of music. The first staff shows a sequence of chords: 6, 5/6, 9/4 8/3, 5/6, 9/4 8/3, 5/6, 9/4 8/3, 5/6, 9/4 8/3. The second staff continues the sequence: 5/6, 9/4 8/3, 5/6, 9/4 8/3, 6 4, 5/6, [6], etc.

Instead of the perfect 5, the diminished 5 may be used, as shown above [see Ex. 9], and yet the $\frac{9}{4} \frac{8}{3}$ can be introduced either separately [i.e., 9 8 or 4 3 alone] or together.

13. The $\frac{4}{2}$ resolving into 6

Exercise 13 consists of a single staff of music. The sequence of chords is: 4/2, 6, 4/2, 6, 4/2, 6, 4/2, 6, 4/2, 6, 4/2, 6, 4/2, 6, 6 4, 5/6, [6], etc.

14. To introduce the $\frac{4}{2}$ in another manner.⁸

Figured bass notation for exercise 14:

Staff 1: 4 2 6 6 5 5b 4 2 6 6 4 2 6 6 5 6

Staff 2: 4 2 6 6 4 2 6 6 6 4 6 6 6 4 2

etc.

The Clausulae finales [cadences] Most in Use

Figured bass notation for 'The Clausulae finales [cadences] Most in Use':

Staff 1: 4 3 6 4 6 5

Staff 2: 6 5 5b 6 5 4 5 7 4 6 6 5

Staff 3: 6 5 7 6 5 6 4 6 5 4 6 5 7 4 6 5 5b 6 4 6 6 6 5

Staff 4: 7 7 6 7 7 6 5 6 5 6 5 4 4 3

Staff 5: 6 4 6 5 7 6 5 6 4 6 5 6 4 6 5 7 6 4 6 5 6 4 6 5 7 6 5 4

⁸ From measure 2 on, the original indicates 6 5 rather than $\frac{6}{5}$.

SOLUTIONS OF BACH'S CANONS

NOTE

"*Canone* (Ital.), *Canon* (Lat.), *κανών* (Gr.) means a rule or a law which one should heed. . . . Therefore a *Canone* is such a vocal or instrumental piece in which two, three, four, or more voices can be performed from a single one; called thus for the reason that the opening voice must serve the others as a plumb line, from which not the slightest deviation is permitted."—Walther's *Musicalisches Lexicon*.¹

Canons, the strictest of contrapuntal pieces, were often used by musicians to serve as greetings to friends and colleagues. Of Bach's occasional canons, seven have survived;² of another only the dedicatory signature is preserved.³ They employ from two to eight parts. Each of them contains some additional artistic device beyond the simple derivation of several voices from a basic line: [a]

(1) The First Four-Part Canon⁴ begins a fifth higher in each voice than in the preceding one, an arrangement rarely met with.

¹ Walther's etymological explanation is not quite accurate. *Canon* specifically denoted the inscription indicating the manner in which a given line was to be performed.

² In addition, the *Musical Offering*, itself an occasional work, contains two canons bearing the following personal inscriptions to Frederick the Great:

Notulis crescentibus crescat Fortuna
Ascendenteque Modulatione ascendat Gloria } *Regis*

As the notes grow, so may grow the Fortune
And as the modulation rises, so may rise the Glory } of the King

³ *In fine videbitur cujus toni.*

Symbolum
Omnia tunc bona, clausula
quando bona est.

Lipsiae, die 2. Novembr. 1725

Haec paucula voluit
Domini Possessoris
Obsequiosiss. Servus
J. S. BACH

In the end, the mode will be clear.

Symbolum
All's well that ends well.
Leipzig, November 2, 1725

These trifles dedicated
to the Honored Possessor by his
Most Obedient Servant
J. S. BACH

⁴ The holograph forms part of the Frederick Locker collection of autographs, now in private possession in New York. Terry's assumption (in his *Bach: A Biography*, Second and Revised Edition, London, 1933) that it had reached America is thus confirmed. Oscar Sonneck and Werner Wolffheim referred to the manuscript without revealing the identity of the composition.

(2) The Second Four-Part Canon begins with the even more unusual series of intervals: fifth, third, fifth. In addition, the little composition is completely invertible.

(3) The Two-Part Canon completely inverts its initial line after four measures, so that a canon in parallel motion is turned into one in contrary motion.

(4) The Eight-Part Canon is fancily dressed up as a canon in contrary motion; it is, however—as Marpurg already pointed out—nothing but a canon in parallel motion, each entry coming a quarter note after the preceding one, and, with its unchanging tonic chord, was presumably intended as a joke.

(5) The Six-Part Canon is a canon of “six parts in three”; or a combination of three two-part canons, each in contrary motion.

(6) The Five-Part Canon is similarly a canon of “four parts in two,” over a repeated bass; or a combination of two two-part canons, each again in contrary motion, over the same bass that was used for the lowest two-part canon in the preceding number.

(7) This eight-part composition introduces seven voices in canon at the unison over another steadily repeated bass; the piece is considerably longer than the preceding one, so that the *ostinato* character of the bass has a chance to become clearly apparent.

The solution for No. 2 was first printed by Mattheson, in *Der Vollkommene Capellmeister* (1739).⁵ No. 4 appears in open score in Marpurg's *Abhandlung von der Fuge* (1753–1754). The solution for No. 5, by A. A. H. Redeker, was given by C. L. Hilgenfeldt in his *J. S. Bach's Leben, Wirken und Werke* (1850); for No. 7, by Spitta in his *J. S. Bach* (1880); for No. 1, by Alfred Dörffel in the Bach-Gesellschaft edition of Bach's works, Vol. XLV, Part I (c. 1895). The solutions for Nos. 3 and 6 are here published for the first time.

⁵ See the item On Bach's Canon for Hudemann in Section V.

I

CANON \hat{A} 4. VOC: PERPETUUS

[See page 64.]

Handwritten numbers: 69, 2, 26, 2, 3, 5, 9, 27, 3, 5, 9, 0, 7, 26, 4, 0, 4

Handwritten numbers: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

Handwritten number: 97

2

CANON À 4

Dédié à Monsieur Houdemann et composé par J. S. Bach

[See page 111.]

Musical score for Canon à 4, measures 1-4. The score is written for four voices (Soprano, Alto, Tenor, Bass) in C major and 4/4 time. The first measure shows the beginning of the canon with a repeat sign. The second measure continues the melody. The third and fourth measures show the continuation of the piece, with a fermata over the final note of the fourth measure.

Musical score for Canon à 4, measures 5-8. The score continues from the previous system. The fifth measure begins with a new melodic line. The sixth and seventh measures show the continuation of the piece. The eighth measure ends with a fermata over the final note.

3

CANON A 2. PERPETUUS

[See page 131.]

Musical score for Canon A 2. Perpetuus, measures 1-4. The score is written for two voices (Soprano, Bass) in C major and 4/4 time. The first measure shows the beginning of the canon with a repeat sign. The second measure continues the melody. The third and fourth measures show the continuation of the piece, with a fermata over the final note of the fourth measure.



4

TRIAS HARMONICA

[See page 175.]

First solution

Musical notation for the "First solution" section, showing eight staves with a bass clef and a common time signature. The music consists of eighth and sixteenth notes, with a double bar line and repeat signs.

Second solution: for two choirs

Musical score for two choirs, labeled "FIRST CHOIR" and "SECOND CHOIR". Each choir part consists of four staves (Soprano, Alto, Tenor, Bass) in G major, 4/4 time. The score shows a sequence of notes with repeat signs and fermatas.

5

CANON TRIPLEX A 6 VOC.

[See page 177.]

Musical score for Canon Triplex A 6 Voc. in G major, 4/4 time. The score consists of six staves (Soprano, Alto, Tenor, Bass for two voices) showing a sequence of notes with repeat signs and fermatas.

6

CANONE DOPPIO

[See page 180.]

The first system of the musical score consists of five staves. The top staff is a treble clef with a key signature of one sharp (F#) and a common time signature (C). It begins with a whole rest followed by a series of eighth and sixteenth notes. The second staff is a treble clef with the same key signature and time signature, starting with a quarter rest followed by eighth and sixteenth notes. The third staff is a treble clef with the same key signature and time signature, starting with a quarter rest followed by eighth and sixteenth notes. The fourth staff is a bass clef with the same key signature and time signature, starting with a quarter rest followed by eighth and sixteenth notes. The fifth staff is a bass clef with the same key signature and time signature, starting with a quarter rest followed by eighth and sixteenth notes.

The second system of the musical score consists of five staves. The top staff is a treble clef with a key signature of one sharp (F#) and a common time signature (C). It begins with a series of eighth and sixteenth notes. The second staff is a treble clef with the same key signature and time signature, starting with a quarter rest followed by eighth and sixteenth notes. The third staff is a treble clef with the same key signature and time signature, starting with a quarter rest followed by eighth and sixteenth notes. The fourth staff is a bass clef with the same key signature and time signature, starting with a quarter rest followed by eighth and sixteenth notes. The fifth staff is a bass clef with the same key signature and time signature, starting with a quarter rest followed by eighth and sixteenth notes.


7

CANON SUPER FA MI A 7.

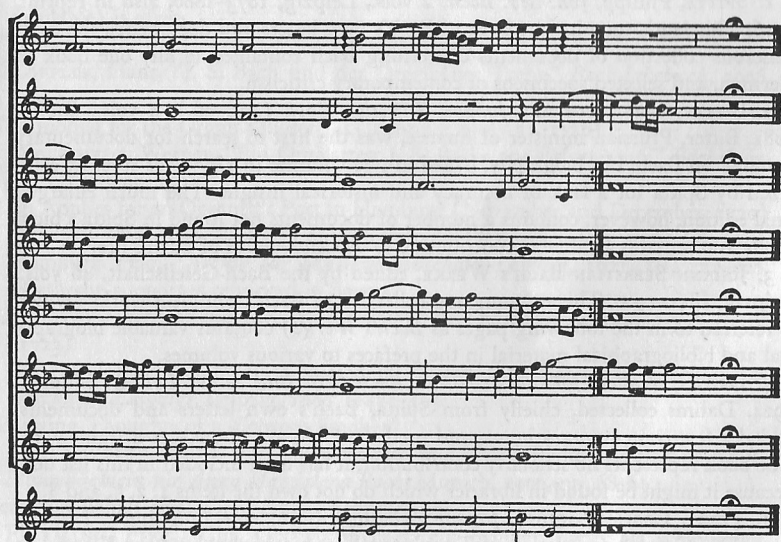
[See page 184.]

The first system of the musical score consists of eight staves. The top staff (treble clef) contains the main melody, starting with a quarter rest followed by a series of eighth and sixteenth notes. The second staff (treble clef) contains a similar melody, slightly offset. The third staff (treble clef) contains a melody that is mostly rests, with some notes appearing later in the system. The fourth staff (treble clef) contains mostly rests. The fifth staff (treble clef) contains mostly rests. The sixth staff (treble clef) contains mostly rests. The seventh staff (treble clef) contains mostly rests. The eighth staff (bass clef) contains a bass line with quarter and eighth notes.

The second system of the musical score consists of eight staves. The top staff (treble clef) continues the melody from the first system. The second staff (treble clef) continues the melody from the first system. The third staff (treble clef) continues the melody from the first system. The fourth staff (treble clef) continues the melody from the first system. The fifth staff (treble clef) continues the melody from the first system. The sixth staff (treble clef) continues the melody from the first system. The seventh staff (treble clef) continues the melody from the first system. The eighth staff (bass clef) continues the bass line from the first system.



Musical score system 1, consisting of eight staves. The notation includes various rhythmic values (quarter, eighth, and sixteenth notes), rests, and dynamic markings. The system concludes with a double bar line.



Musical score system 2, consisting of eight staves. This system continues the musical piece and ends with a double bar line.