THE LOST CHORD

HARMONISATION ON KEYBOARD INSTRUMENTS

I

STEPHEN TAYLOR

The Lost Chord

Seated one day at the organ,
I was weary and ill at ease,
And my fingers wander'd idly
Over the noisy keys;

I know not what I was playing,
Or what I was dreaming then,
But I struck one chord of music,
Like the sound of a great Amen.

(Poem by Adelaide Proctor, set to music in 1877 by Arthur Sullivan)

PART I

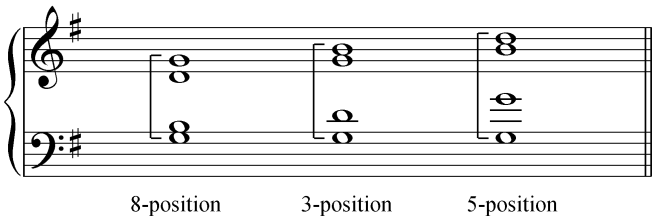
CONTENTS

Instructions for use

Readers are advised to consult the Preface to *The Lost Chord* elsewhere on this site.

The degrees of the scale are indicated by the Roman numerals I, II, III, IV, V, VI and VII.

In Part I only the triad with the root in the bass is used, as will be explained in ch.5. In four-part playing this triad may occur in three positions, named after the interval between the soprano and the bass:



The above chords are in closed spacing: the distance between the soprano and the tenor is less than an octave; between the three upper parts there is no space to add a note belonging to the chord in question. All exercises in Part I of *The Lost Chord* are to be played in closed spacing, with the upper three parts in the right hand (r.h.) and the bass in the left hand (l.h.). See further ch.12. (The reason why open spacing is hardly employed is explained in Part III ch.13.)

From ch.5, it is beneficial for organists to repeat exercises with a solo stop and pedals as indicated. From ch.12, additional exercises in more difficult keys are intended to challenge the more advanced player; they may be skipped by those who find them daunting.

Although I have devised the exercises in this tutor such that the player who follows my instructions should be able to harmonise correctly, I would advise all readers to seek the help of an experienced teacher. The latter will safeguard the student from pitfalls, and, if desired, provide the player with additional material. No tutor on any subject was ever complete, and still less definitive.

Many hymn tunes, and particularly those composed before the 19th century, have rich written and oral histories. This accounts for the fact that they are often transmitted in different versions, in variant keys and even with divergent titles. Many date from a period when barlines were employed irregularly; indeed, many tunes were not written in regular time at all but have a charmingly irregular rhythmic structure. Frequent alternation of duple and triple time, for example, was still widespread in the 17th century. In such cases, the addition of bar lines and time signatures often only muddles the score. Where clarification is desirable I have added little vertical lines.

For practical reasons, all hymns and chorales are named after the melody rather than the first line of the text (though in German chorales this is usually one and the same thing). In order to encourage historical awareness, I have mentioned the dates of melodies and settings in as far as they are known, though a certain caution is required, since these are often dates of publication rather than composition. An index of hymns and chorales used as exercise material in *The Lost Chord* is provided in a separate document.

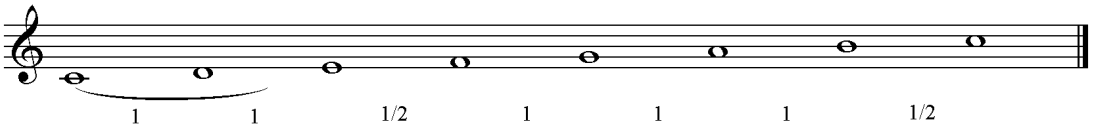
1

SCALES (i)

Whole tones and semitones
The scales of C, G and F

The distance between any two adjacent keys on the keyboard is a **semitone**. The distance between C and C sharp, therefore, is a semitone. The distance between E and F, and between B and C, is also a semitone. The distance between C and D, and between E and F sharp, is a **whole tone**.
In order to make music, we need to organise these semitones and whole tones so that all available notes become related to one another. **Scales** help us to achieve this. In the course of music history, various systems of scales have been employed.
Before beginning to develop our harmonisation skills, let us look closer at the scales on which the classical music of the 18th and 19th centuries is based.

The **scale of C** comprises the following sequence of whole tones and semitones:



EXERCISE:

Play by memory the scale of C. Play slowly, hold the first note down (with the l.h.) and take note of the following:

C is the **fundamental note** of this scale; it occurs twice and creates a frame around the scale. When played together, the two Cs sound open and clear.

D creates an ongoing movement from C to E. This forward movement is strengthened by the fact that D clashes with the fundamental note C (and with E) if we play them together.

E creates a first moment of rest, and produces a full sound in combination with C. If we release the C, we can also hear an ongoing movement from E to F, caused by the semitone between the two.

F comes between E and G, in more ways than one. On the one hand, it sounds logical to play on up to G, but on the other hand it is tempting to return to E, especially when the C is held.

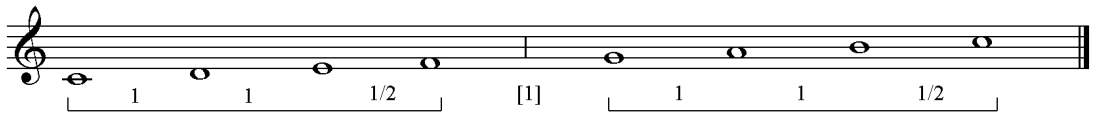
G is just over half way up the scale; it creates a sort of turning point, a moment of relaxation, from where we can choose, as it were, whether to carry on up or go back down again. (Later we shall see that this 'turning point' quality of the 5th note of the scale is essential to harmonisation.) In combination with the initial C, G creates a sonorous sound.

A is somewhat comparable to D in that it creates an ongoing movement from G to B. But when A sounds above the held C, we may be tempted to turn back from A to G.

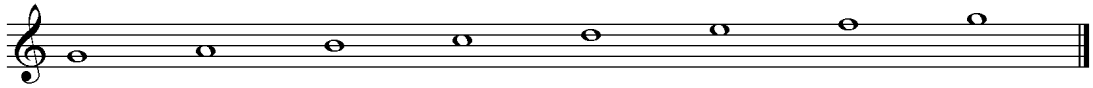
When we arrive at **B** we look forward to the following C. This effect is strengthened when the low C is held: the clash with B is resolved by moving on up to C by means of the second semitone in the scale.

The scale of C is not a random collection of sounds, but a sequence of notes that are related to one another, and particularly to the fundamental note. Each note of the scale has a function of its own within the whole, and each note has its own field of tension in relation to the fundamental note C.

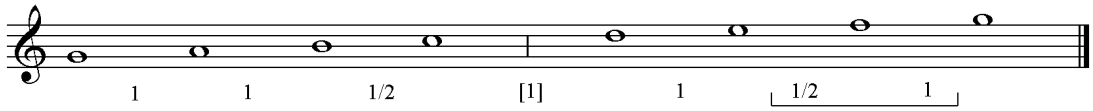
If we divide the eight notes of the scale of C into two groups of four, the following parallel structure of whole tones and semitones results:



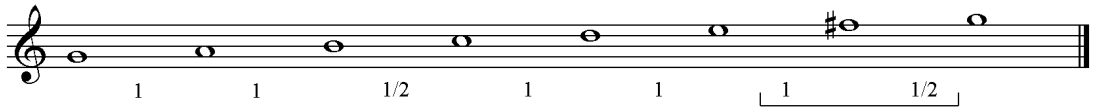
If we knew nothing of this structure, and nothing of sharps and flats, we might imagine that the scale of G is as follows:



But when we listen to this series, and examine the pattern of whole tones and semitones, the scale proves to be incorrect:

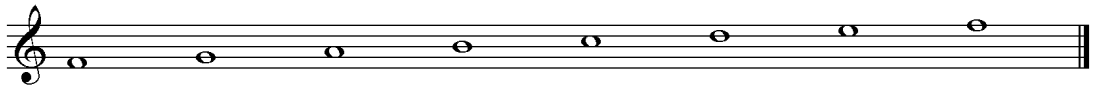


The final semitone and whole tone are in the wrong order. By raising F to F sharp we arrive at the **scale of G**:

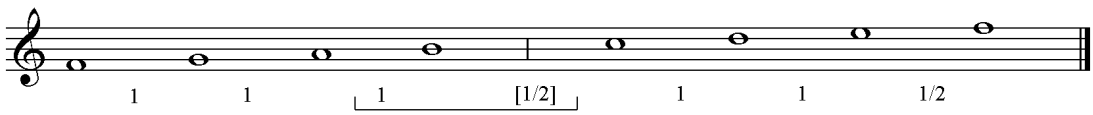


All available note names (A B C D E F G) must be present in every scale. This important rule may be illustrated as follows:

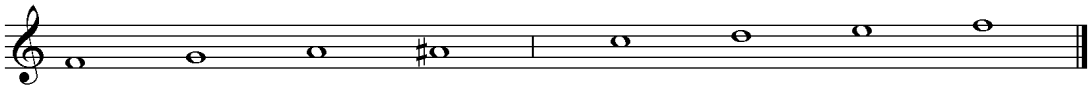
If we knew nothing of sharps and flats, we might imagine that the scale of F is as follows:



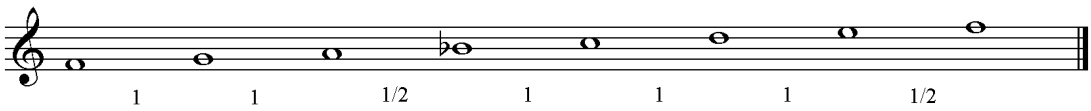
But when we listen to and examine the distances between the notes, the series proves again to be incorrect:



If we replace B by A sharp, the scale sounds correct:



But though it may sound correct, the rule is that all available note names must be represented in the scale. The note name B is absent, while the name A is actually represented twice (in the form of A and A sharp). The correct notation of the **scale of F** is therefore as follows, with B flat instead of A sharp:

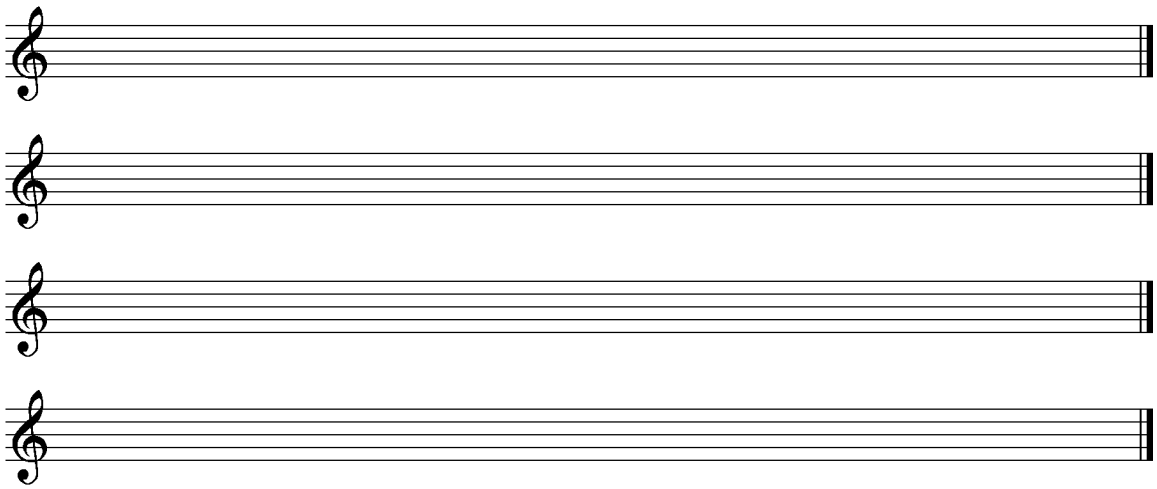


EXERCISES:

1. Learn by memory the correct sequence of whole tones and semitones:

1 1 ½ 1 1 1 ½

2. Write below the ascending scales of D, A, B flat and E flat. Notate the necessary sharps or flats at the beginning of the line or before the relevant note.



3. Play by memory the scales of C, G, D, A, F, B flat and E flat.

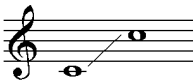
2

INTERVALS (i)

The intervals 8ve, 2nd and 3rd
New scales

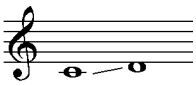
In the first chapter we heard and read how the notes of the scale of C relate to one another and to the fundamental note C, or, in other words, how the various distances create different fields of tension.
In music, the distance between two notes is called an **interval**. Knowledge of the intervals, of the fields of tension that are created when two or more notes are played simultaneously or successively, is essential to our harmonisation skills.

The octave

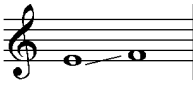


In playing the scale of C, we listened to the open, clear sound of the two Cs combined. This is the interval of an **octave** (8ve), from the Latin word *octavus* or 'eighth': if the low C is the first note, the upper C is the eighth. Of all intervals, the 8ve conveys the least tension.

The second

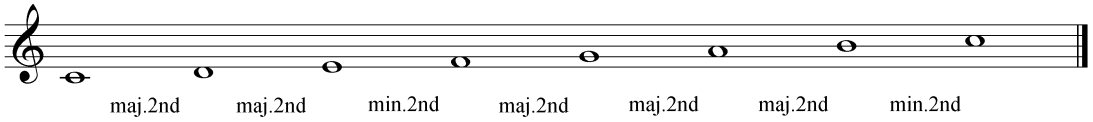


In the scale of C, D is the second note. The whole-tone distance C-D is an interval of a **second** (2nd), or, more precisely, a **major 2nd**. The interval D-E (we do not need to take C as our point of departure) is also a major 2nd.



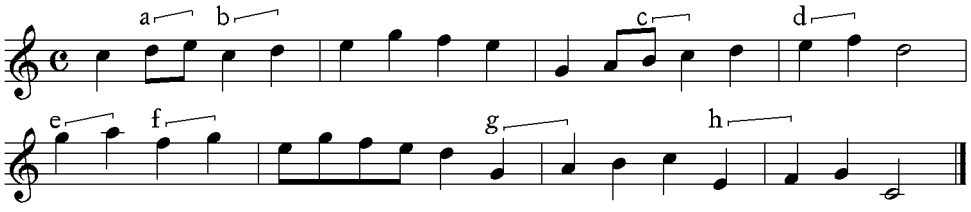
The semitone distance E-F is an interval of a **minor 2nd**. The distance B-C is also an interval of a minor 2nd.

The sequence of whole tones and semitones in the scale of C can now be considered as a sequence of major and minor 2nds:



EXERCISE::

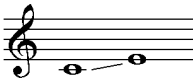
1. Distinguish the major and minor 2nds in the following melody:



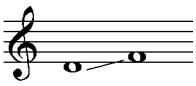
a = b = c = d =

e = f = g = h =

The third

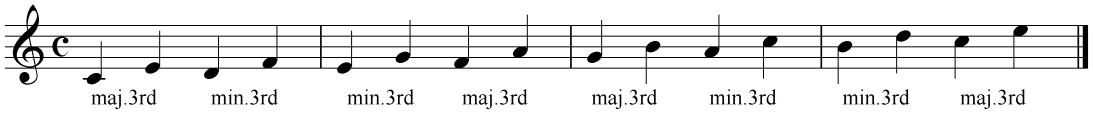


In the scale of C, E is the third note. The distance C-E is an interval of a **third** (3rd), or, more precisely, a **major 3rd**.
If we imagine the interval C-E as a combination of C-D plus D-E, then the major 3rd is the sum of two major 2nds.



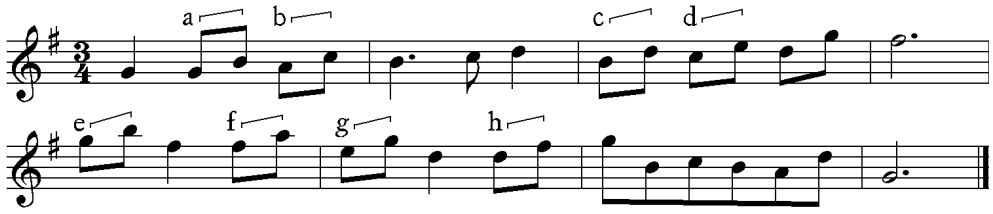
If we combine the 2nds D-E and E-F, a different situation arises. D-E is a major 2nd, while E-F is a minor 2nd. The distance D-F is an interval of a **minor 3rd**, and the minor 3rd is the sum of a major and a minor 2nd.

Listen to the contrast between major and minor 3rds in this example:



EXERCISES:

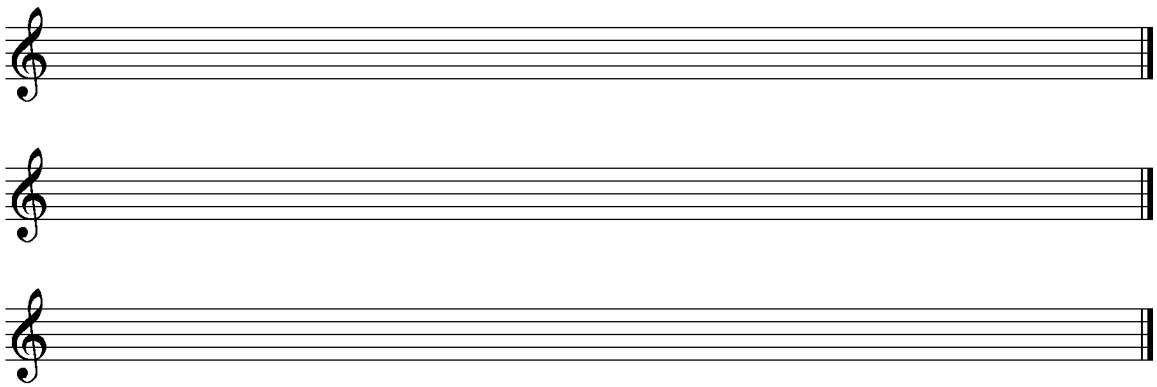
1. Distinguish the major and minor 3rds in the following melody:



a = b = c = d =

e = f = g = h =

2. Notate the ascending scales of E, B and F sharp:



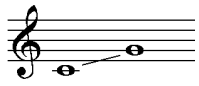
3. Play by memory the scales of C, G, D, A, E, B, F sharp, F, B flat and E flat.

3

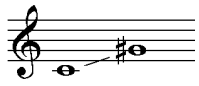
INTERVALS (ii)

The 5th
New scales

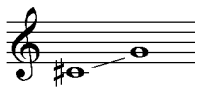
The fifth



In the scale of C, G is the fifth note when counted from the fundamental note. The distance C-G is therefore an interval of a **fifth** (5th).
The 5th C-G can be subdivided into the major 3rd C-E and the minor 3rd E-G. The interval C-G is a **perfect 5th**; the perfect 5th can be considered as the sum of a major and minor 3rd.



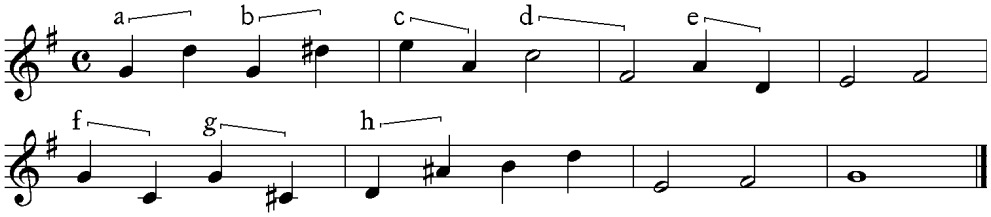
If G is replaced by G sharp, the interval remains a 5th. But C-G sharp is not a perfect 5th.
The interval C-G sharp can be subdivided into the major 3rd C-E and the major 3rd E-G sharp. The 5th C-G sharp is an **augmented 5th**; the augmented 5th can be considered as the sum of two major 3rds.



Play the interval C sharp-G and listen to the increased tension in comparison with the perfect 5th C-G. In the interval C sharp-G, G is the fifth note from C sharp. The interval, therefore, is likewise a 5th, but it is neither perfect or augmented.
The 5th C sharp-G can be subdivided into the minor 3rd C sharp-E and the minor 3rd E-G. The interval C sharp-G is a **diminished 5th**; the diminished 5th can be considered as the sum of two minor 3rds.

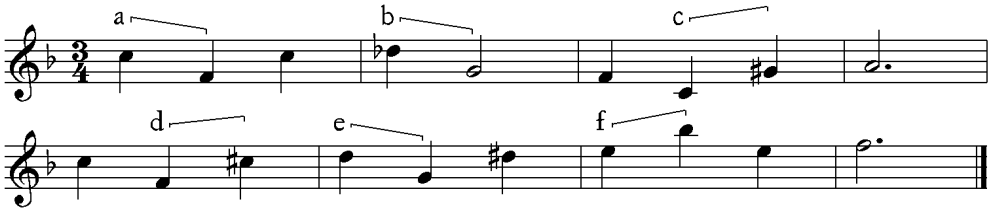
EXERCISE:

Distinguish the intervals of a perfect 5th, augmented 5th and diminished 5th in the following melodies:



a = b = c = d =

e = f = g = h =

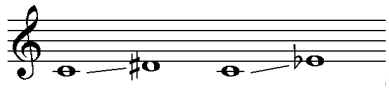


a = b = c =

d = e = f =

In order to determine the name of an interval, we must look first at the **natural note** (C, D, E etc.) before taking any sharps or flats into account (C sharp, D sharp, E flat etc.).

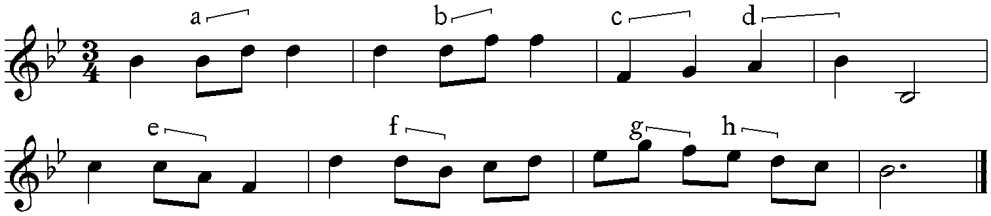
This important rule means that the two intervals in the example have different names, despite the fact that they sound identical when heard on their own.



If we look first at the natural notes of the interval C-D sharp, in other words C and D, it is clear that the interval must be a 2nd. The natural notes of the interval C-E flat are C and E, indicating the interval of a 3rd. The interval C-D sharp is an **augmented 2nd**, and the interval C-E flat is a minor 3rd.

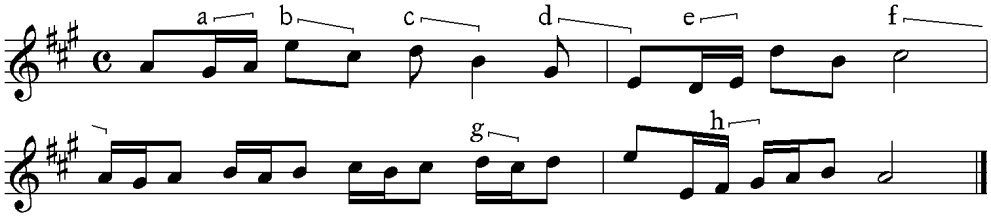
EXERCISES:

1. Distinguish the major and minor 2nds and major and minor 3rds in the following melodies:



a = b = c = d =

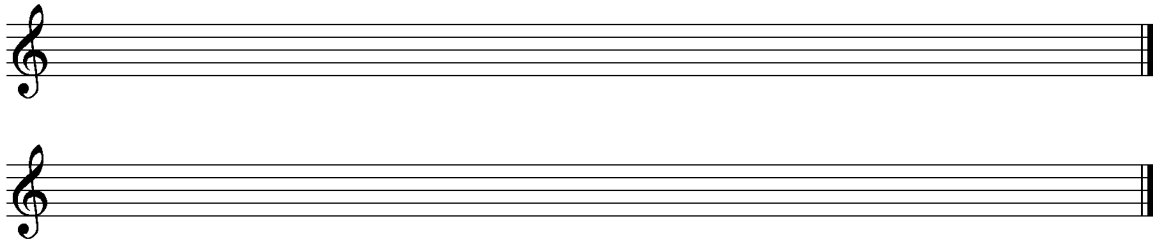
e = f = g = h =



a = b = c = d =

e = f = g = h =

2. Notate the ascending scales of A flat and D flat:



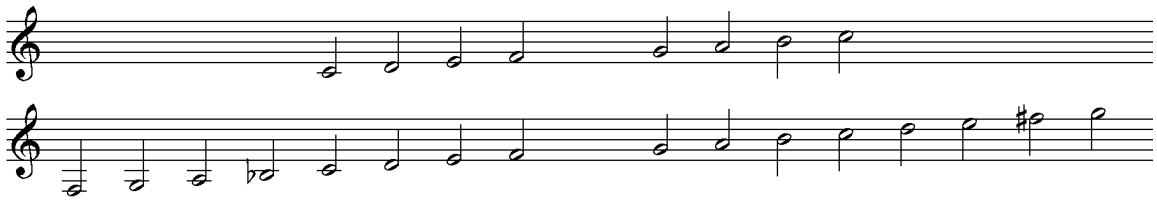
4

SCALES (ii)

The circle of 5ths
Recognition of intervals

The circle of 5ths

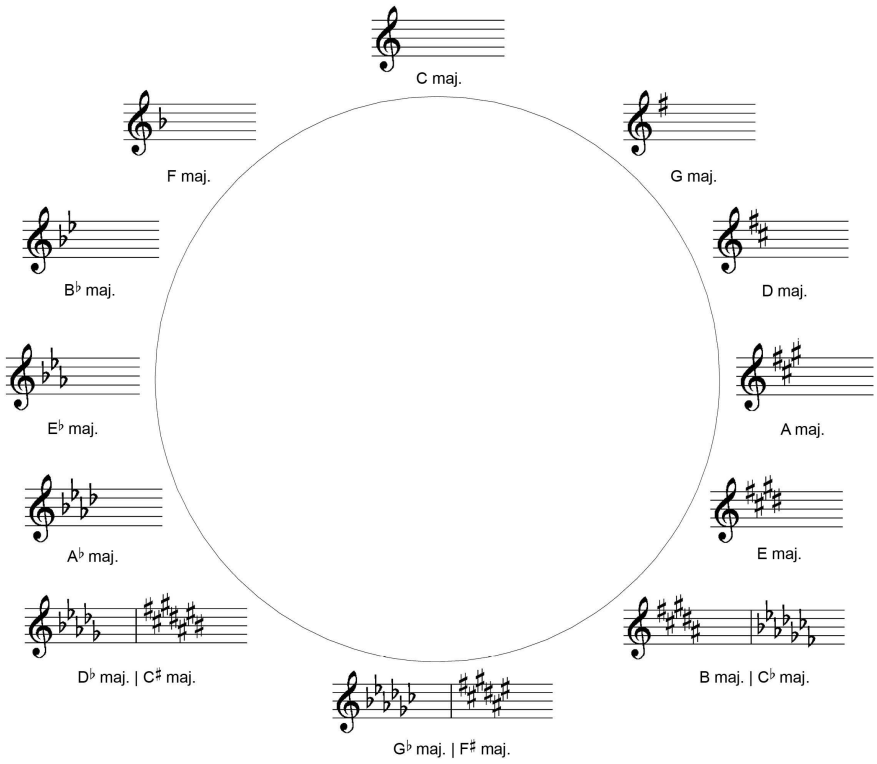
The scales discussed in the first three chapters are all **major scales**, a name derived from the major 3rd interval between the first and third notes of these scales. In ch.8 the **minor scales** will be introduced.
In ch.1 we began with the major scale of C. Moving five notes up the scale to G (C-G = perfect 5th), we played the major scale of G by introducing F sharp. By moving down a perfect 5th below C, we played the major scale of F by introducing B flat.
The relationship between these three major scales can be illustrated as follows:



The scale of C major has been divided again into two parallel sections. The four lowest notes of the scale of C are identical to the four highest notes of the scale of F major. The four highest notes of the scale of C are identical to the four lowest notes of the scale of G major.
By reducing this scheme to the three fundamental notes

C
F G

we have the beginning of the **circle of 5ths**. The entire circle of 5ths is as follows:



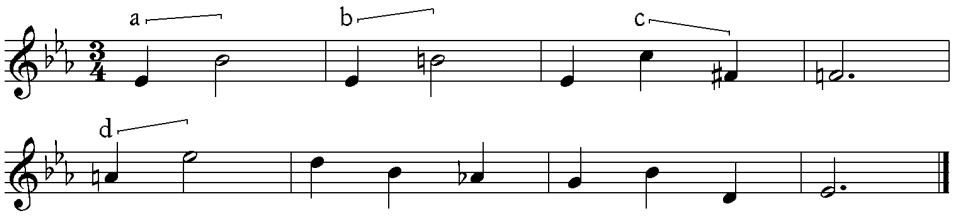
If we move clockwise from C, leaping by the interval of a perfect 5th and adding a sharp, we arrive at the next major scale. The four highest notes of the previous scale are identical to the four lowest notes of the new scale.
If we move anticlockwise from C, jumping down by the interval of a perfect 5th and adding a flat, we arrive at the next major scale. In this case, the four lowest notes of the previous scale are identical to the four highest notes of the new scale.
We can also depart from C in one direction around the entire circle by moving up a perfect 5th (clockwise) or down a perfect 5th (anticlockwise). At the bottom of the circle we change from sharps to flats or vice versa. This saves us from ending up with 11 sharps or 11 flats, which would be rather tiresome.

The circle of 5ths, containing all 12 notes, is the ideal way to organise our scales and keys. The following chapters include exercises to be played in all keys. It is neither logical or desirable to begin in C and then move up by semitones (C, C sharp, D, D sharp etc.). We must learn to practise in the logical sequence of keys, as given in the circle of 5ths.

Intervals

A thorough acquaintance with all the major scales provides us with a useful memory aid in order to identify intervals. In the major scale, the second above the fundamental note is always a major 2nd, the 3rd above the fundamental note a major 3rd, and the 5th above the fundamental note a perfect 5th.
Be careful to think in terms of the ascending major scale. The descending scale gives quite a different picture: in the scale of C major, the 2nd below the fundamental note is the minor 2nd B-C - we must always begin from the lowest of the two notes! - and the 3rd below the fundamental note is the minor 3rd A-C.

In order to distinguish the perfect, diminished and augmented 5th intervals, for example, rather than subdividing in major and minor 3rds we can proceed as follows:



Interval (a): in the scale of E flat, B flat is the 5th note; E flat-B flat is therefore a perfect 5th.
Interval (b): in the scale of E flat, the 5th note is not B but B flat; the B stretches the perfect 5th by a semitone and the interval E flat-B is therefore an augmented 5th.
Interval (c): in the scale of F sharp, the 5th note is not C but C sharp; the C narrows the perfect 5th by a semitone and the interval F sharp-C is therefore a diminished 5th.
Interval (d): in the scale of A, the 5th note is not E flat but E; the E flat narrows the perfect 5th by a semitone and the interval A-E flat is therefore a diminished 5th.

In this way we can identify all the different intervals. Two rules are important:
- our point of departure is always the lowest of any two notes;
- we imagine this lowest note as the fundamental note of a major scale, irrespective of the key of the music.

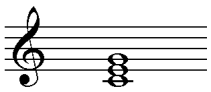
5

THE MAJOR TRIAD

The major triad
The triad in the 8-, 3- and 5-positions

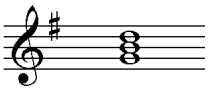
The major triad

In the major triad of C, the note C is the fundamental note or **root**. Above the root we hear the major 3rd E and the perfect 5th G. The major triad of C consists of the 1st, 3rd and 5th notes of the major scale of C.

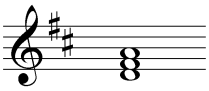


The intervals are determined from the lowest note upwards. G is therefore considered as a perfect 5th above the root C rather than as a minor 3rd above E.

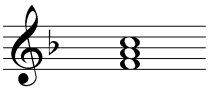
Similarly, the major scale of G forms the basis for the major triad of G:



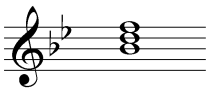
Travelling one step further around the circle of 5ths, we come to the major triad of D:



From C we can also move down a 5th to the major triad of F:



One step further brings us to the major triad of B flat:



In all cases, the major triad consists of the 1st, 3rd and 5th notes of the relevant major scale.

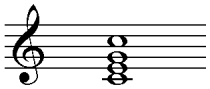
EXERCISES:

1. Play the major scale of C followed by the major triad of C. Move to G and repeat the scale and triad, and so on clockwise around the circle of 5ths.

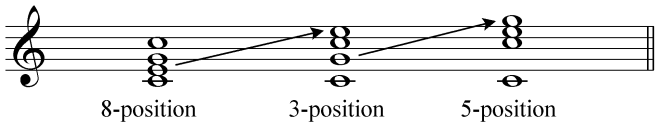
2. Go around the circle of 5ths again, playing only the major triads. Practise until the chords can be played without hesitation.

The triad in the 8-, 3- and 5-positions

In order to use the triad in four-part harmonisation, one of the three notes must be doubled. For the time being we double only the root:



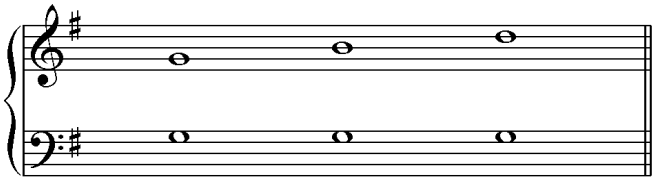
By interchanging the three upper parts, we can play the triad, with its doubled root, in three different **positions**. The root is always present in the lowest part:



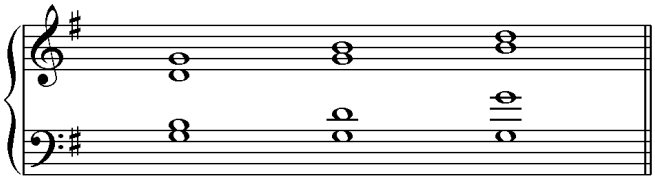
The name of each position reflects the interval between the lowest and highest voices. In the first chord, the interval between the lowest and highest voice is an 8ve. In the second chord the interval is really an 8ve plus a 3rd, but this may also be described as a 3rd, and the same is true of the 5th.

The harmonic progressions in Part I of this tutor employ the triad with the root in the bass. (The 'inversions' of the triad are introduced in Part II.) The above positions of the triad, referred to henceforth as the 8-, 3- and 5-positions, reflect the arrangement of the three upper voices above the root in the bass (see *Instructions for use* at the beginning of this book).

If we move from C to G, clockwise around the circle of 5ths, it is easy to find the 8-, 3- and 5-positions of the major triad of G. The 1st, 3rd and 5th notes of the major scale of G - G, B and D - form the required triad, and by doubling the root G we are able to play four-part chords. The root G always sounds in the lowest voice. In the highest voice we hear first the 8ve, then the (8ve +) 3rd, and finally the (8ve +) 5th:



We can now fill in the two inner voices. Throughout this tutor, the upper three voices are to be played with the right hand (r.h.) and only the lowest voice with the left hand (l.h.):



In four-part music it is customary to call the parts by the names of the voice groups in a four-part choir:

soprano	Latin *supra*	= above
alto	Latin *altus*	= high
tenor	Latin *tenere*	= to hold
bass	Latin *bassus*	= low

(In late medieval music the tenor - whether vocal or instrumental - was often the most important part, in which a 'line' fundamental to the composition had to be 'held' - think of the words tenant and *tenuto*.)

EXERCISES:

1. Play by memory the 8-, 3- and 5-positions of the major triads of C and G, as given above. Play the soprano, alto and tenor with the r.h. and the bass with the l.h. Continue with the triad of D and so on clockwise around the circle of 5ths. It is helpful to repeat the relevant scale first, as well as the triad without the doubled root.
2. Practise the 8-positions separately via the circle of 5ths.
3. Practise the 3-positions separately via the circle of 5ths
4. Practise the 5-positions separately via the circle of 5ths
5.* Repeat ex.1-4 with a solo stop and pedals; i.e. the soprano (on a separate manual) in the r.h., the alto and tenor in the l.h., and the bass in the pedal. (Preparatory exercise: play on one manual and pedal, but with the soprano in the r.h. and the alto and tenor in the l.h.)[+]

+ The exercises with an asterisk offer revision practice for organists, for whom it is important to be able to play the alto and tenor with the l.h. and the bass with the pedals, enabling the r.h. to play solo.

6

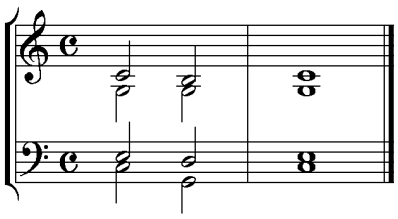
KEYS

Keys and degrees
The I-V-I progression in the major key

In playing the three positions of the major triad of C, the root C was constantly present in the bass. This first note of the scale is called the first **degree**, and is indicated by the Roman numeral **I**. If we turn to the scale and major triad of F, the first degree (I) is now F, since this is the first note of the scale: F is therefore not just another note, but the very basis of the scale, to which all other notes are related.

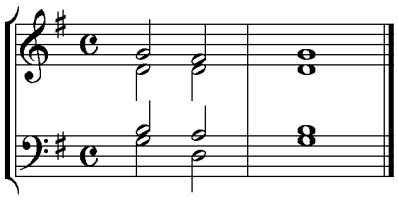
A scale contains all the notes we require in order to play in a particular **key**. In ch.1 we listened to the way in which the notes of the scale of C major create different fields of tension in relation to the root note C. The term key refers to this key note, around which all other notes of the scale gravitate. As we learn about harmonisation, we shall see that fields of tension are caused not only by individual notes, but also - and indeed to a greater extent - by groups of notes, or **chords**, and the manner in which they relate to a key. As we embark on our first harmonisation exercises, we shall speak more about keys than about scales.

Let us commence with the following example:



The triad of C forms the beginning and end - moments of relaxation and stability, between which we hear the triad of G. When two people throw a ball one to the other, the excitement or tension is caused by the ball being in the air; when it is caught, the tension disappears. In our example, we hear that the G triad has to go somewhere, and that it 'lands' again on the C triad. This tension has nothing to do with the triad of G in itself, but with its position between the triad of C. We experience a field of tension within the key of C major.

Let us transfer these thoughts to the key of G:



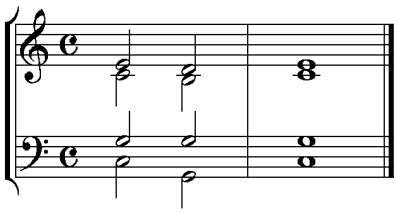
Now it is the G triad that throws the ball, and the D triad that creates the necessary tension while the ball is in the air.
Before practising this progression in other keys, let us examine it more closely:

- In our second example, tension is absent in the G triad, which is now degree I.
- In the bass we play the notes G-D-G, moving from I to V and back again. (Note that the degrees are numbered according to the ascending scale - D is therefore V in the key of G.)
- As we can see from the intervals between the soprano and bass, the 8-position on I is followed by the 3-position on V.
- The chords on I and V have one note in common - the D. This note remains in the alto, while the soprano and tenor move by the smallest possible steps from one chord to the other.

EXERCISE:

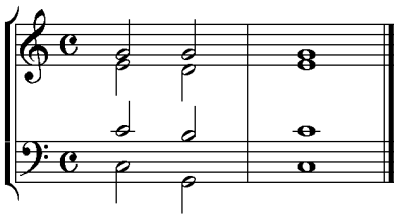
Practise the above I-V-I progression by memory in all keys with the help of the circle of 5ths; play the soprano, alto and tenor in the r.h. and the bass in the l.h.

The I-V-I progression can be played in other ways too. The bass remains unchanged, but above it we already have other positions of the triads at our disposal. Let us return to the key of C major:



On degree I we now play the 3-position of the triad, and on V the 5-position. The common note G remains in one voice (now the tenor), while the soprano and alto move by the smallest possible steps to the next chord.

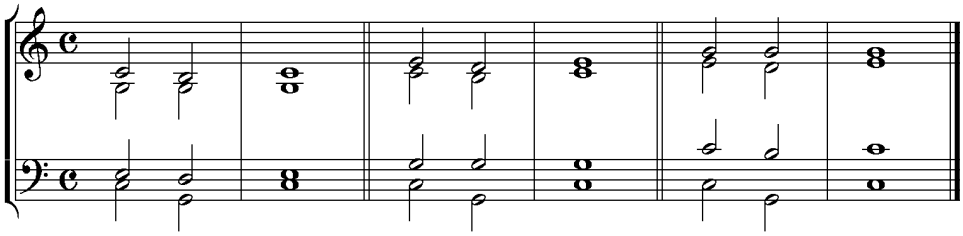
A third possibility is as follows:



The 5-position on I is followed by the 8-position on V. The common note G is now in the soprano, while the alto and tenor move in 2nds.

EXERCISES:

1. Practise by memory the three versions of the I-V-I progression in the key of C major. Name the positions of the chords as you play:



2. Practise by memory the same progressions in the major keys of G, D, A, F, B flat and E flat.

3. Practise by memory the same progressions in the major keys of E, B, F sharp, D flat and A flat.

4.* Repeat ex.1-3 with a solo stop and pedals.

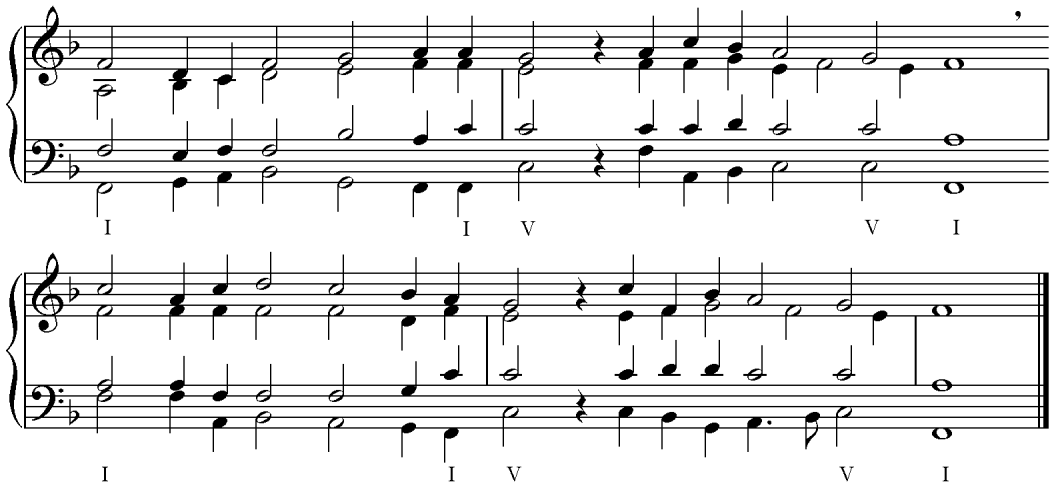
7

CADENCES IN THE MAJOR KEY

The function of the cadence
The tonic, dominant and subdominant

A **cadence** in music has the same function as a full stop or comma in a text: a particular chord progression tells us that a phrase is interrupted or ended. A cadence is therefore a musical punctuation, helping us to comprehend what we play. Cadential progressions and the corresponding phrase structure were a determinate and cohesive factor in the organisation of **tonal** music from about 1600 to 1900, to the extent that music historians now refer to this era as the common practice period. (The term 'tonal' is generally used in reference to music that employs the major and minor keys. In the 16th and 17th centuries the tonal keys gradually replaced the medieval **modes**; in the 20th century, they were in turn largely banished by **atonal** systems.)

In the previous chapter, we noted that the triad on degree I creates relaxation and stability. In the most common cadential progression, the triad on I is preceded by the triad on V. V falls to I, as it were, in order to bring the music to an end, or to create a full stop or comma during the piece. Indeed, the word cadence derives from the Latin verb *cadere* (to fall). We hear this V-I cadence at the end of both systems of *Nun danket all* by Johann Crüger (1598-1662):

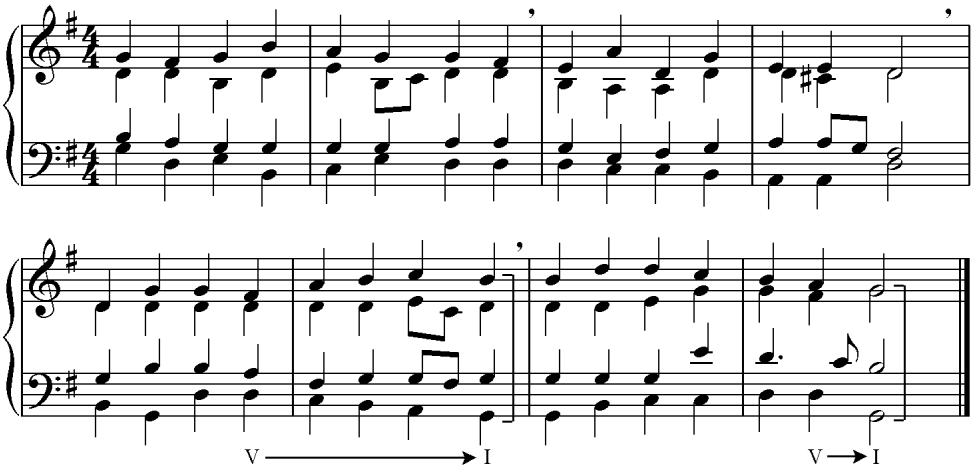


But Crüger teaches us more about the function of the cadence. When we play his harmonisation, we hear that the cadences, or moments of relaxation, correspond exactly with the phrases of the text. All four phrases end on I or V in the key of F major.

In ch.1 we observed that the 5th note of the scale has a 'turning point' quality: it is like a pivot, just over half way up the scale, between the fundamental note at the bottom and top. In the previous chapter we compared the I-V-I progression to a ball game. In the first system of Crüger's setting we hear the same game in a broader context: the first phrase begins on I and ends on V, where the music hangs in the air, as it were, before returning to I at the close of the first system. These are the pivots, the commas in the music that correspond to the commas in the text. Music and text come to rest for a moment on V, but this is not the end, and we can hear that they will move on again to I at the end of the second phrase. The second system reveals an identical structure.

The V-I cadence at the end of the second and fourth phrases is called a **perfect** or **full cadence**. The cadence ending on V, at the end of the first and third phrases, is called an **imperfect** or **half cadence**. The imperfect cadence ending on V is often approached via I or IV, but may also be preceded by other degrees.

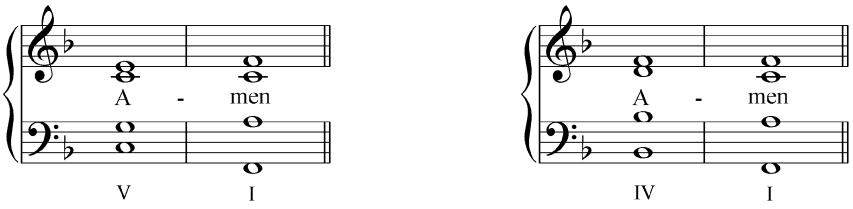
Not all perfect cadences fall by a perfect 5th, for they may also rise by a perfect 4th from V to I. The leap, however, is essential, as the second system of *Redhead* by Richard Redhead (1820-1901) reveals:



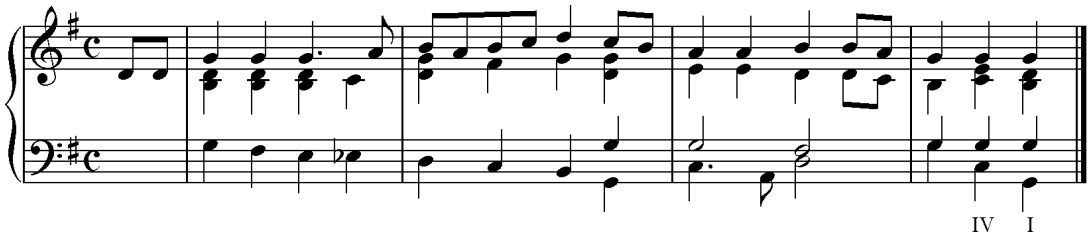
During the third phrase, the bass moves stepwise from V to I; at the end of the setting, it leaps from V to I. The final cadence has a conclusiveness that the third phrase clearly lacks: we can hardly imagine the setting ending at this point. In addition to the direct progression from V to I in the closing cadence, a second factor contributes to its finality: the soprano ends on the 8-position, on the first note of the scale, while the previous phrase ends on a 3-position. The 8-position at the close is not obligatory, but it does increase the stability of the final chord. (According to some theorists, the upper voice must indeed end on the first note of the scale in a perfect cadence.)
The V-I cadence unambiguously confirms the key, and is therefore one of the pillars of tonal music.

The first degree of the scale is called the **tonic**, derived from the Greek word 'tonos' (tone). The fifth degree is called the **dominant**; as we have already seen, it does indeed claim a dominant role, surpassed only by the tonic.

Less frequent than the V-I cadence is the IV-I cadence, though organists are likely to perform both on Sundays:



They may even be required to play *Lord of the dance*, which ends thus:

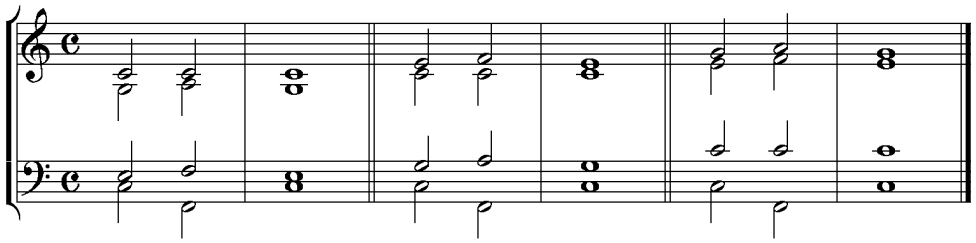


At the final cadence, the 8-position on I is preceded by the 5-position on IV.

The perfect cadence V-I is also referred to as the **authentic cadence**; the IV-I cadence is known as the **plagal cadence**. (The terms authentic and plagal are derived from the medieval modal system that preceded the tonal keys.)

EXERCISES:

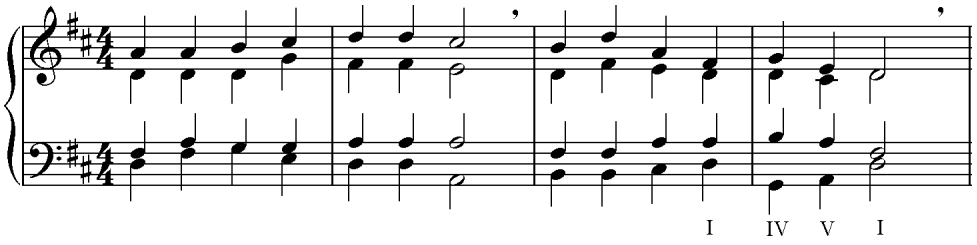
1. Practise by memory the following positions of the (I-) IV-I cadence in the key of C major. The common note is the tonic C. The other two parts move stepwise to the next chord:



2. Practise by memory the same I-IV-I progressions in the major keys of G, D, A, F, B flat and E flat, and then in E, B, F sharp, D flat and A flat.

3.* Repeat the exercises with a solo stop and pedals

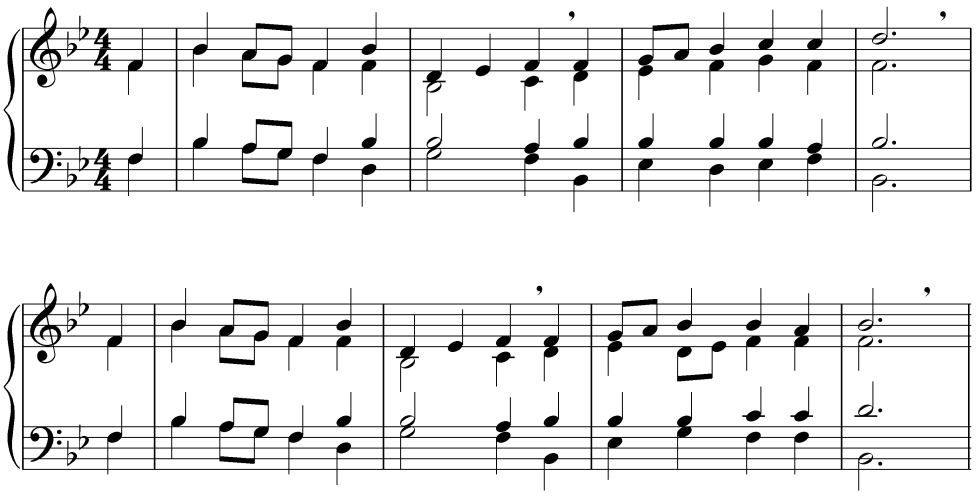
The fourth degree of the scale is called the **subdominant**. The subdominant IV is frequently employed as a preparation for the V-I cadence, as in the first line of J.G. Werner's *Ratisbon*:

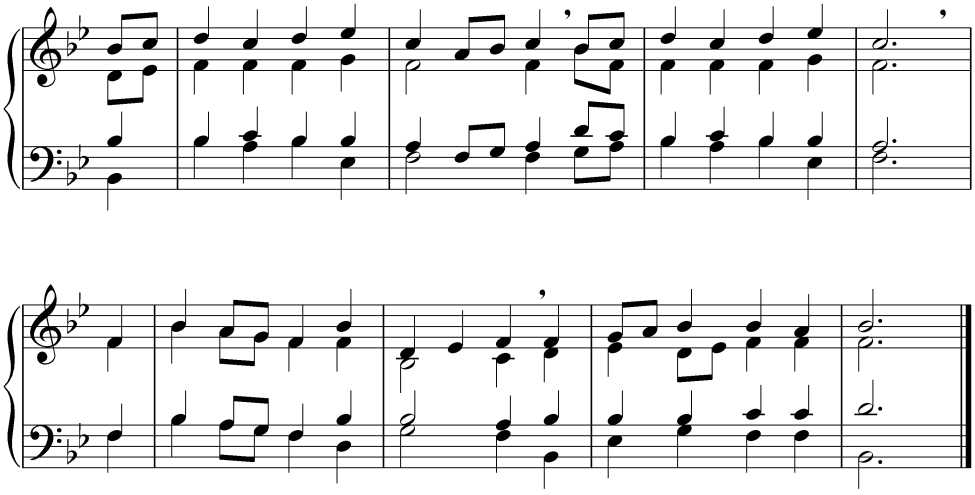


EXERCISES:

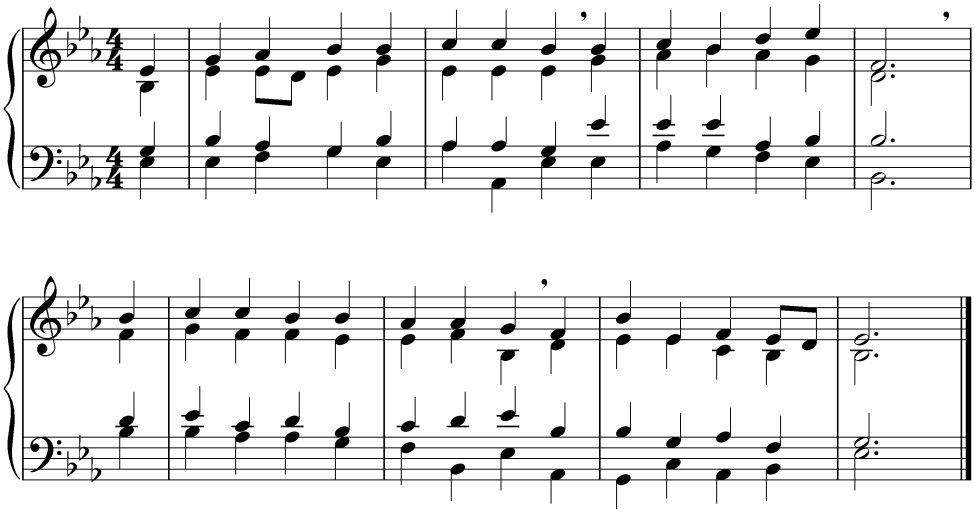
1. Play the following hymn tunes. Determine the key and add the degrees I, IV and V where they occur at cadences:

(a) *Ellacombe* (Mainz, 1833)

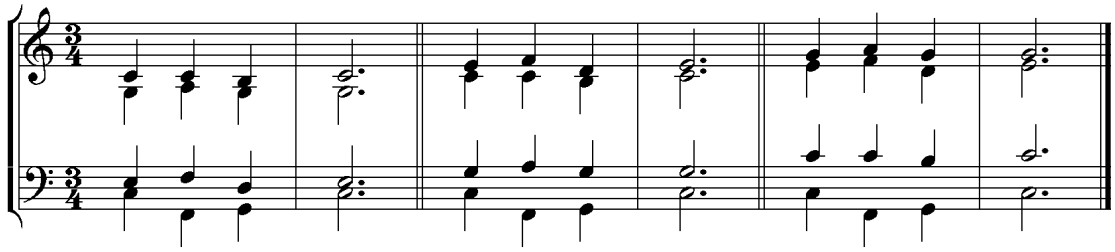




(b) *Solomon* (after an aria in *Solomon*, George Frideric Handel, 1685-1750)



2. Practise by memory the following positions of the (I-) IV-V-I cadence in the key of C major. Note the **part writing**, i.e. the manner in which each part runs its course. Notes common to consecutive chords - C in the triads on I and IV, G in the triads on V and I - remain in the same part; the other upper parts move to the nearest note in the next chord. Thus the voices flow as smoothly as possible.



3. Practise the same progressions in the major keys of G, D, A, F, B flat and E flat, and then in E, B, F sharp, D flat and A flat.

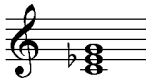
4.* Repeat ex.2 and 3 with a solo stop and pedals.

8

THE MINOR KEY (i)

The minor triad
The harmonic minor scale

The counterpart to the major triad is the minor triad, with its distinctive minor 3rd above the root:

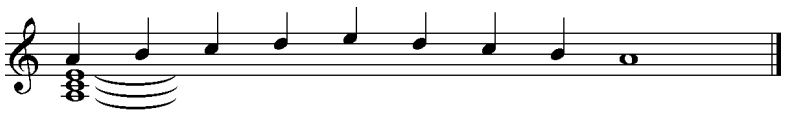


The triad of C minor plays a central role in the key of C minor. In English, we speak of major and minor keys. The German terms are more suggestive: *Dur* (major) comes from the Latin word *durus*, meaning hard, and *Moll* (minor) comes from the Latin *mollis*, meaning soft. We tell children that the major triad sounds cheerful and the minor triad sad, and how true this is!

EXERCISE:

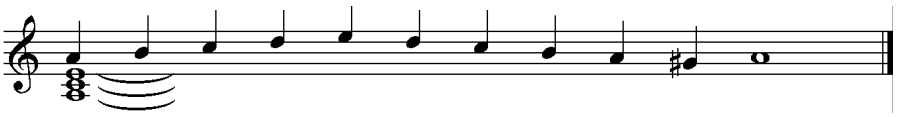
Play the minor triad on degree I in all keys. Follow the circle of 5ths, playing the triad of C minor where C major is indicated. In the next chapter we will learn to organise the minor keys in the circle of 5ths.

If we play the first three notes of the descending scale of C major, we hear the minor 3rd C-A, or rather A-C. Let us take A as our point of departure to explore a series of notes based on the minor 3rd A-C. That A is not a random choice, will become clear later.
Play the triad of A minor in the l.h., and in the r.h. a series of notes that 'fill in' this triad:

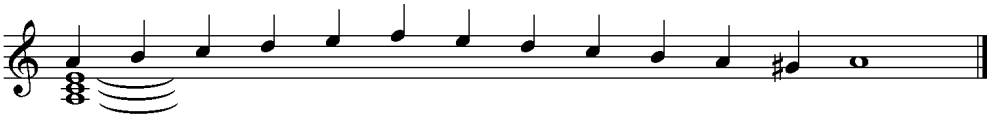


The notes B and D create ongoing movement between A-C-E, the notes of the triad.

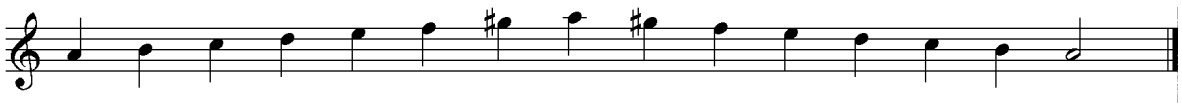
In the ascending scale of C major we observed that the semitone B-C 'pulls' strongly towards C. By adding G sharp to our series of notes, we can create the same sensation towards the root A:



By adding an F at the top of our series, we create a tension similar to that at the bottom. The F invites us to turn back at the top, while the G sharp invites us to turn again at the bottom to the root A:

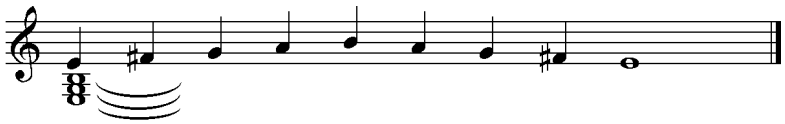


These are the notes that we require for our first exercises in the minor key. In a slightly different order, they constitute the **harmonic minor scale** of A:

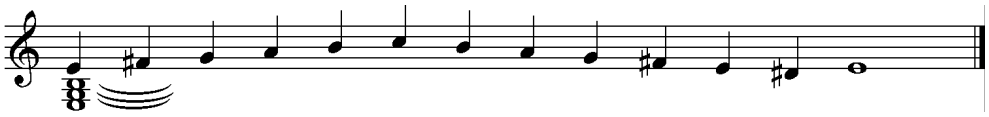


Let us repeat the above steps by starting with the descending scale of G.

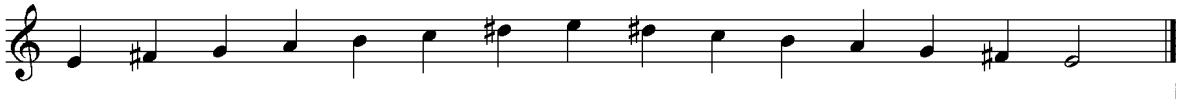
1. By stepping down a minor 3rd we arrive at E. In the l.h. we play the minor triad on E, which we ‘fill in’ with the r.h.:



2. At the top and bottom we add a minor 2nd:

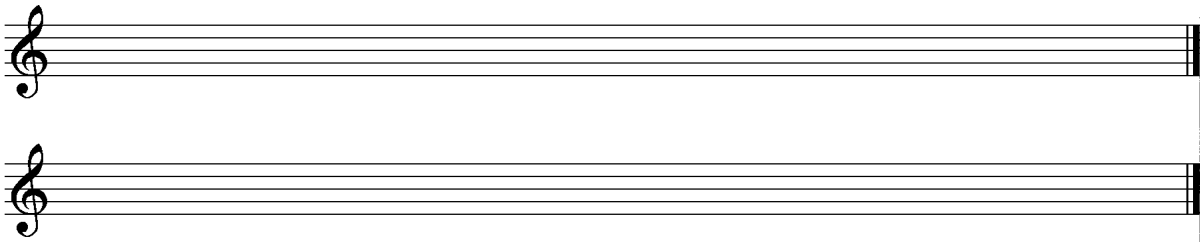


3. By moving the semitone D sharp-E we establish the <u>harmonic minor scale</u> of E:

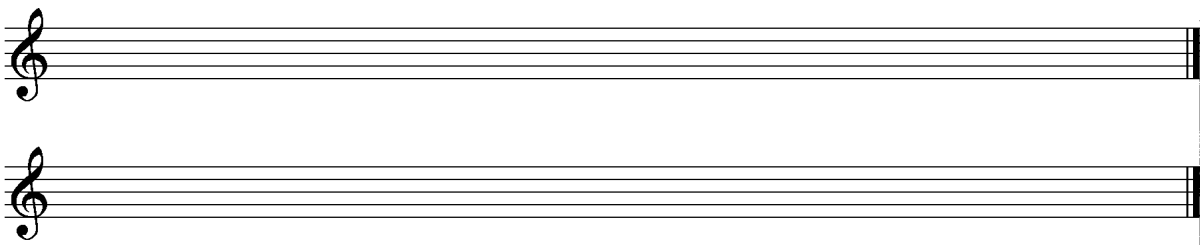


EXERCISES:

1. Repeat the above three steps, starting from the major scales of F and B flat. Play by ear the resulting harmonic minor scales and write them down below. Add any sharps and flats to the notes in question, making sure that every note name is represented.



2. Repeat the same procedure, starting from the major scales of D and A. Play by ear the resulting harmonic minor scales and write them down below. Add any sharps and flats to the notes in question.

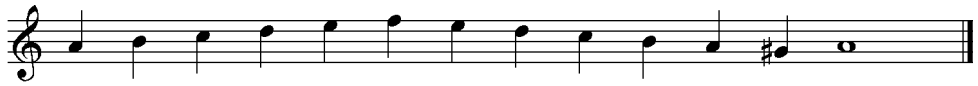


9

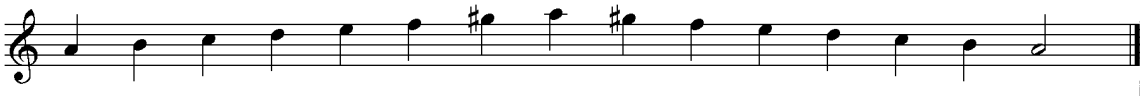
THE MINOR KEY (ii)

The melodic minor scale
Relative keys and the circle of 5ths

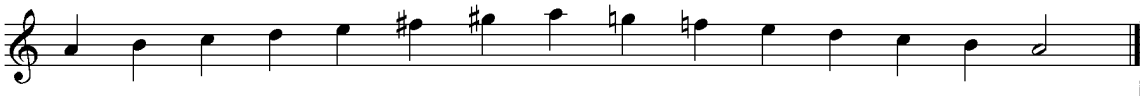
In the previous chapter, the series of notes based on the minor triad appeared to adequately accommodate the minor key:



The series runs fluently around A, via F at the top and G sharp at the bottom. However, if we arrange the same notes over a full octave, in the form of the harmonic minor scale, we hear that F natural and G sharp create a slightly angular effect:



The interval F-G sharp is an augmented 2nd, and in the harmonic minor scale it sounds somewhat awkward. Indeed, in writing a melodic line we may wish to avoid this interval. For this very reason, in the minor key we have a melodic scale at our disposal in addition to a harmonic scale. There are two ways of avoiding the augmented 2nd between F and G sharp: either by raising F to F sharp or by lowering G sharp to G. The **melodic minor scale** does both, and for this reason the ascending and descending versions differ:

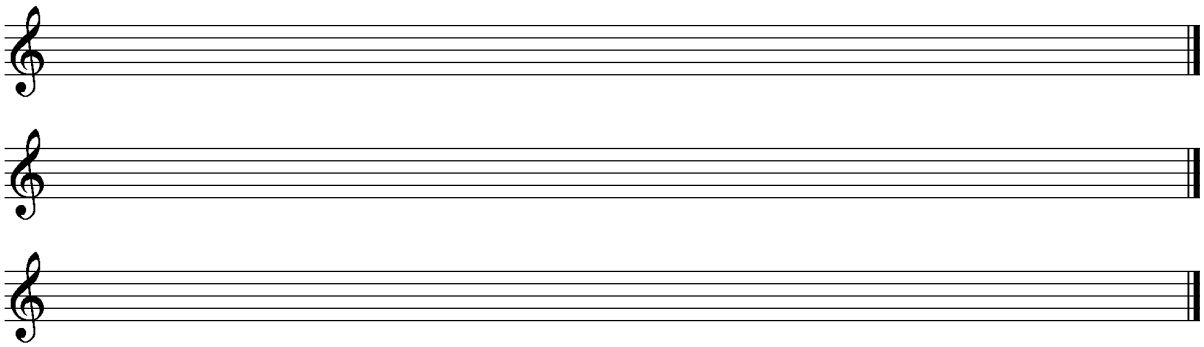


The melodic minor scale therefore differs from the harmonic minor scale in the following: in the ascending scale both VI and VII are raised, and in the descending scale both are lowered.

EXERCISES:

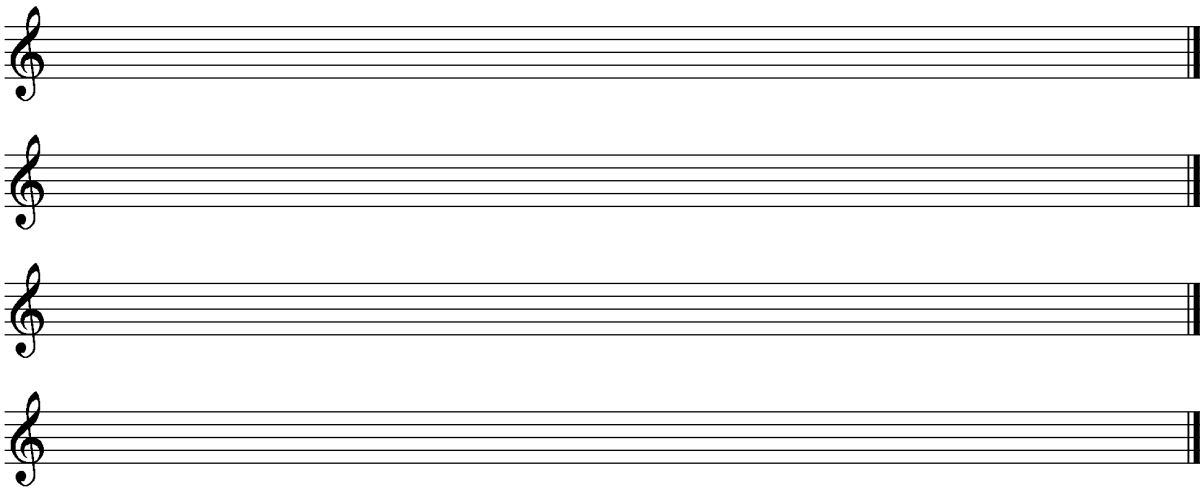
1. Repeat by memory the harmonic minor scale of E. Now play the melodic minor scale of E (ascending: VI and VII raised; descending: VII and VI lowered). In the same manner, learn the melodic minor scales of B and F sharp by memory.

2. Write down the ascending and descending melodic minor scales of E, B and F sharp. Add any sharps, flats or naturals to the notes in question.



3. Play by ear the melodic minor scales of D, G, C and F.

4. Write down the ascending and descending melodic minor scales of D, G, C and F. Add any sharps, flats or naturals to the notes in question

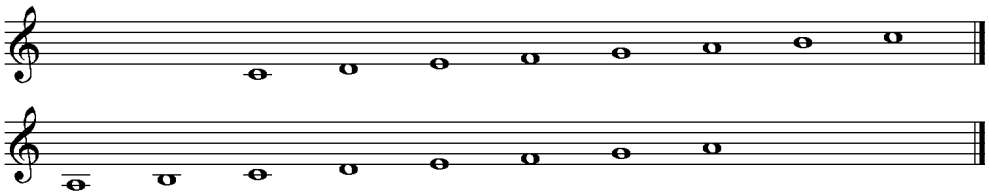


Music theory, like the theory of any other subject, is an attempt to analyse and explain a certain practice by formulating rules. The many exceptions to the rules - including the rules in this tutor! - illustrate their sometimes limited scope when we attempt to reduce music to a series of rules and principles.

The minor key is a case in point: unlike the major key, it cannot be formulated in a single scale. In the minor key, melodic lines on the one hand and harmonic progressions on the other often require different notes, making it difficult to accommodate them all in the same scale. In the minor key, therefore, we employ both a harmonic and a melodic scale - two series of notes, or rather, three, since the melodic minor scale comprises two series in itself. In this way, even the exceptions are included in the rules!

Before the reader begins to despair, at the end of this chapter the minor keys will be properly organised in the circle of 5ths. But first we must understand how the minor keys relate to their major counterparts.

In ch.8 we used the minor 3rd at the top of the descending scale of C to leap from C down to A. Around the fundamental note A, we arranged a series of notes that resulted in the harmonic minor scale of A. The leap from C down to A, from the key of C major to A minor, was not a leap in the dark, since the two keys prove to have much in common. The following example illustrates the step from the one scale to the other, while omitting any sharps in the second scale:

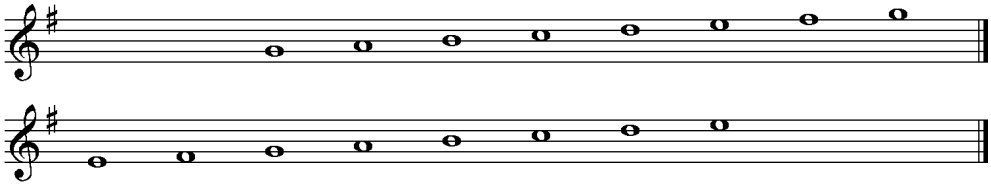


In the harmonic and melodic scales of A minor, the notes F sharp and G sharp are indicated in the music as required. All other notes are common to the scale of C. The key of A minor is the **relative minor key** of C major.+

+ In Dutch, the relative minor key is called the *parallel* key, for obvious reasons.

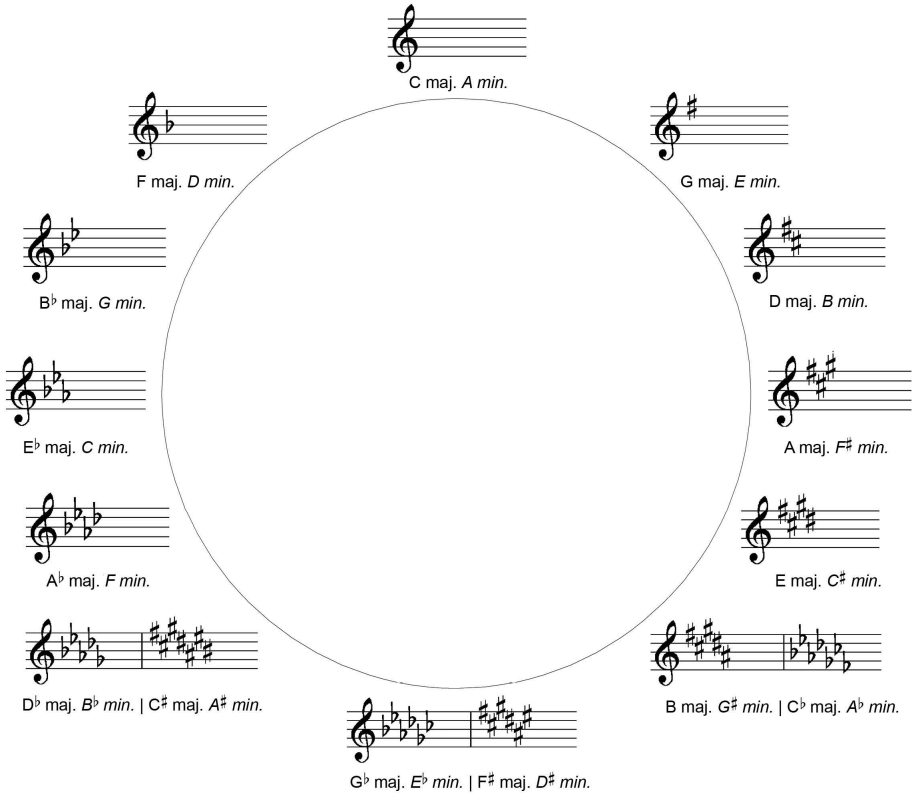
Each major key has a relative minor key, and vice versa. As the term implies, the two keys are closely related: they share almost the same notes and therefore have the same key signatures.

Let us take the scale of G major as our second example, with a series on E below:



Both scales have the same key signature. The series on E is identical to the descending melodic minor scale of E. If we raise D to D sharp, it is identical to the harmonic minor scale. And if we raise C to C sharp, it becomes the ascending melodic minor scale.
The raised or lowered degrees VI and VII are not included in the key signature. This would hardly be practical, for as we have seen in the minor scales, these two notes are not always raised or lowered. These incidental changes are therefore indicated by **accidentals**: sharps, flats or naturals that are added to individual notes as required in the course of a composition (especially in pieces in minor keys).

Now we can add the relative minor keys to the circle of 5ths:



10

RECOGNISING KEYS

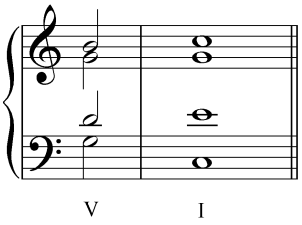
The function of the leading note

A major key and its relative minor key share the same key signature. The key signature at the beginning of a piece therefore presents two possibilities. Despite their common key signature, however, the two keys are essentially different. If we play a piece through in order to establish the key, we must ask ourselves the following:

- Does the music clearly centre around a particular key or tonic?
- Does the colour or mood tell us that the work is in a major or a minor key?
- On which scale is the final cadence based, with its degrees in the bass? Does the final cadence feature accidentals?

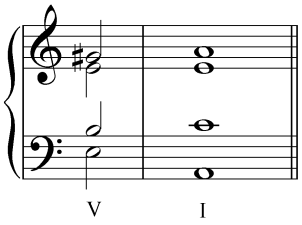
The third question may be explained as follows. In most cases, the final cadence will be a V-I progression:

V-I in C major:



V-I in C major implies G-C in the bass

V-I in A minor:



V-I in A minor implies E-A in the bass

In the C major cadence, the triad on degree V (the dominant) includes the major 3rd B. The note B is VII in the scale of C, and it is called the **leading note**. Via the interval of a semitone, the leading note leads to the tonic C.
In the A minor cadence, the triad on degree V includes the major 3rd G sharp. The note G sharp is VII in the harmonic minor scale of A: the leading note G sharp rises by a semitone to the tonic A.

When we hear the leading note as the major 3rd of the triad on the dominant V, followed by a leap in the bass to the tonic I, we experience the most essential harmonic progression of all major and minor keys, a progression that leaves no doubt about the key. Once again, the circle of 5ths helps us to understand this.

The circle of 5ths shows us that the difference between the keys of C and G major lies in just one sharp. In the scale of G major, as we rise from VII back to I, from leading note to tonic, we create the required semitone interval by playing F sharp instead of F. For the rest, the scale of G has the same notes as the scale of C. By playing V-I in the key of G major, we hear F sharp, the decisive leading note, on its way to the tonic, so that the key cannot be confused with C.
As we travel clockwise around the circle of 5ths, each new key introduces an extra sharp. This new sharp is the leading note of the new key, and therefore the essential difference from the previous key.

For a composer of tonal music, the triad on the dominant V, containing the leading note, is indispensable in order to establish a key; for the player, the dominant is indispensable in order to recognise a key.

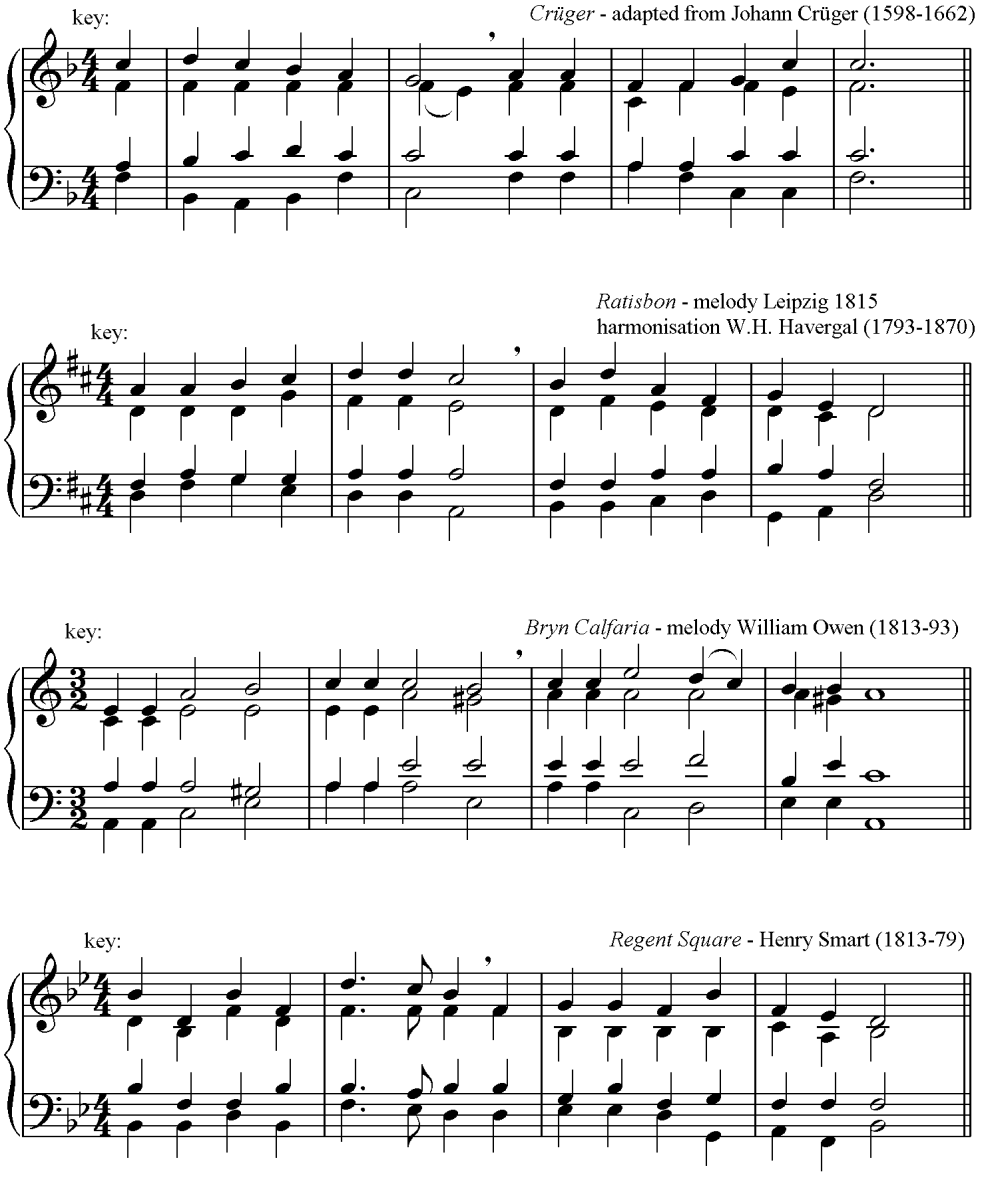
In both major and minor keys, the interval between VII and I - between leading note and tonic - is a semitone. The function of the leading note in the V-I progression, in which this semitone interval is always present, is one of the strongest characteristics of all tonal music. Here lies one of the most essential differences between music based on (in historical order) the medieval modes, the tonal scales and a range of scale systems employed in the 20th century.

Summary

In order to establish the key of a composition, look first at the key signature. This presents two possibilities: a major key and its relative minor key. Now look at the final cadence, and especially at the degrees in the bass and any accidentals. Do not worry about cadences that may occur in the course of the piece; they can deviate because the music may move or modulate to other keys as it proceeds. This will be discussed in ch.19.

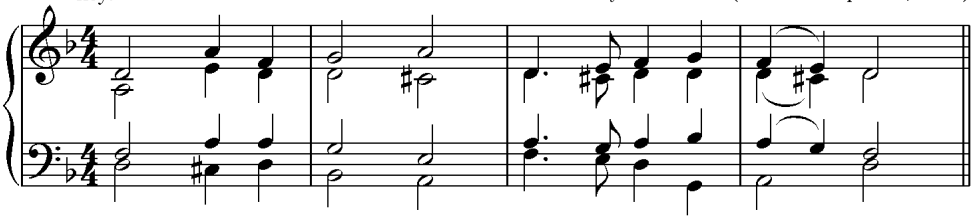
EXERCISE:

Below are the first lines (or more) of a number of hymn tunes. Play each one and note the key.



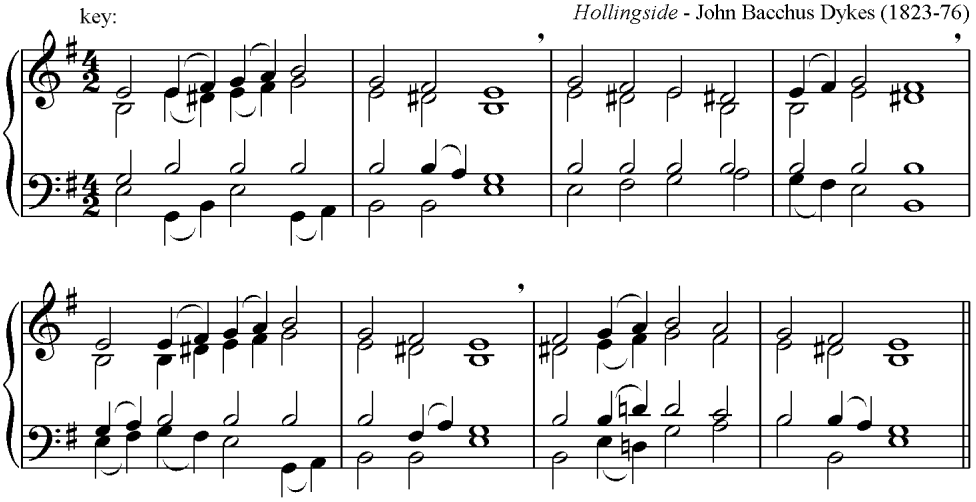
key:

Iste confessor - anon (Poitiers Antiphoner, 1746)



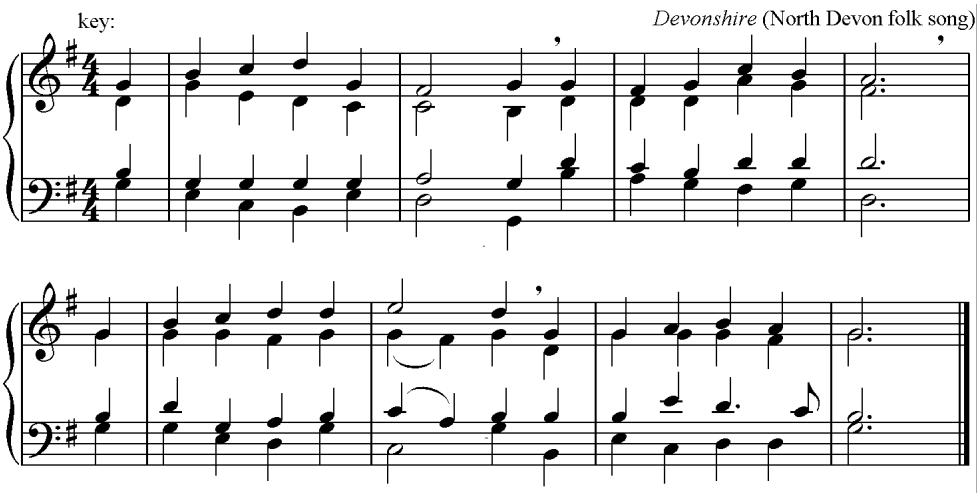
key:

Hollingside - John Bacchus Dykes (1823-76)



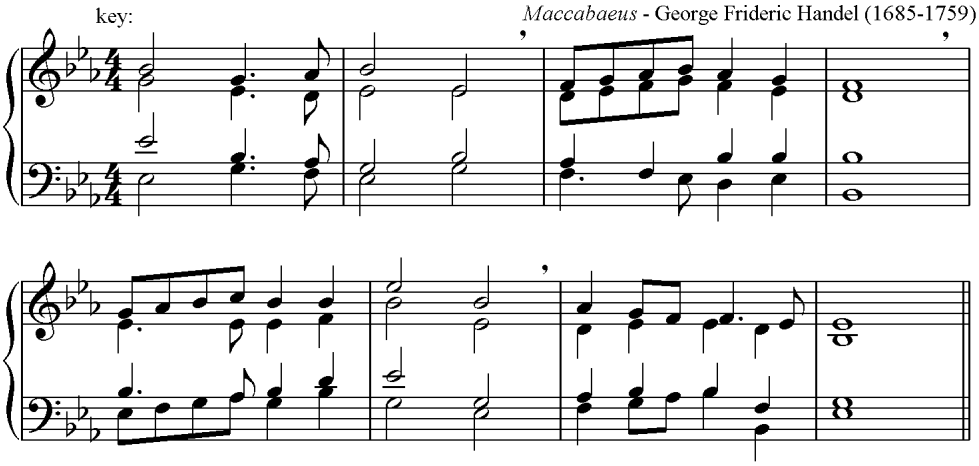
key:

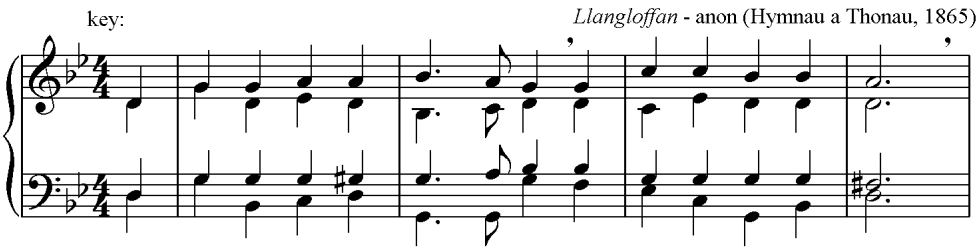
Devonshire (North Devon folk song)

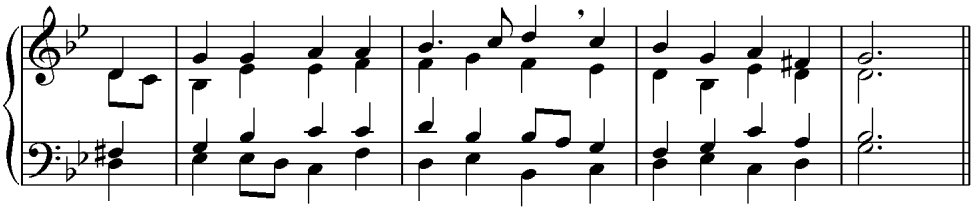


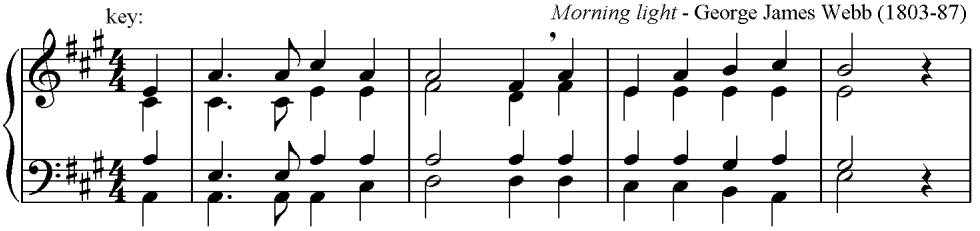
key:

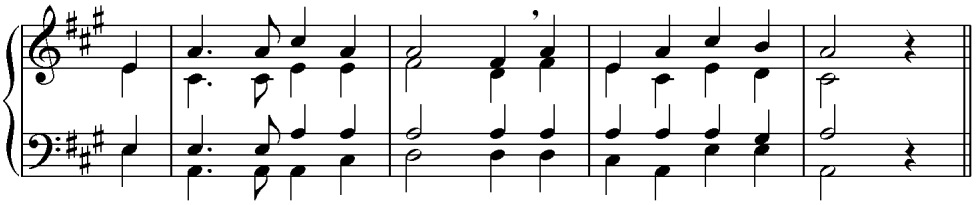
Maccabaeus - George Frideric Handel (1685-1759)

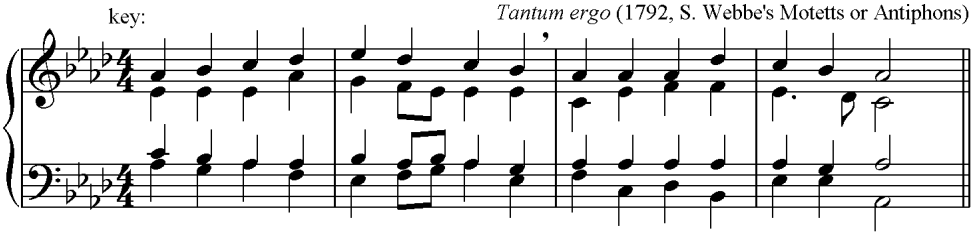


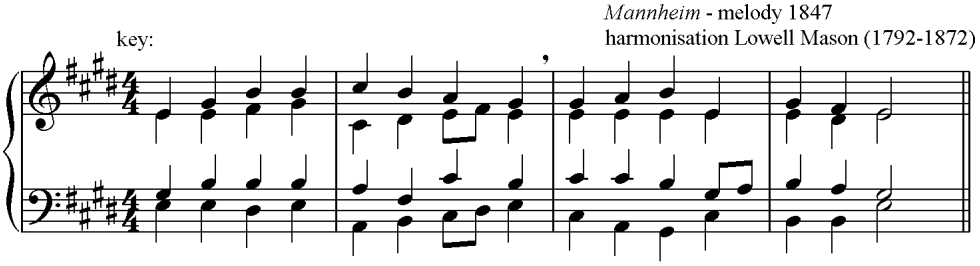

key:
Llangloffan - anon (Hymnau a Thonau, 1865)

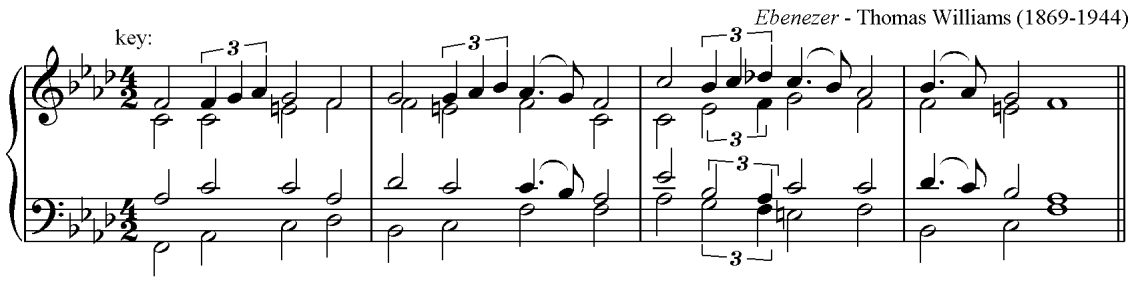



key:
Morning light - George James Webb (1803-87)



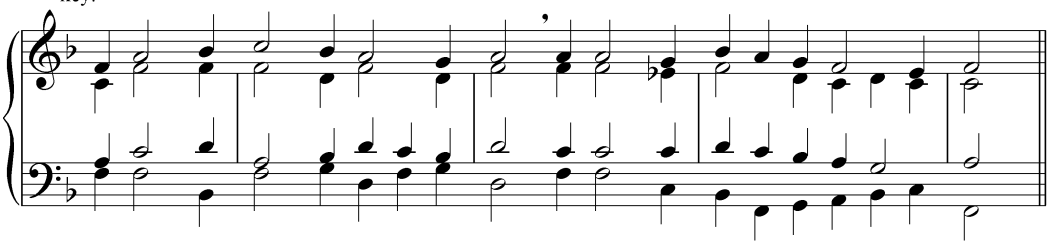

key:
Tantum ergo (1792, S. Webbe's Motetts or Antiphons)


key:
Mannheim - melody 1847
harmonisation Lowell Mason (1792-1872)


key:
Ebenezer - Thomas Williams (1869-1944)

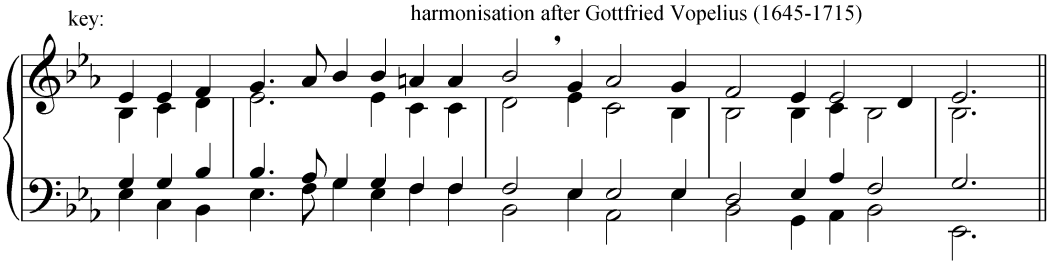
Allein Gott in der Höh sei Ehr - melody Leipzig 1539
harmonisation after Michaël Praetorius 1607

key:



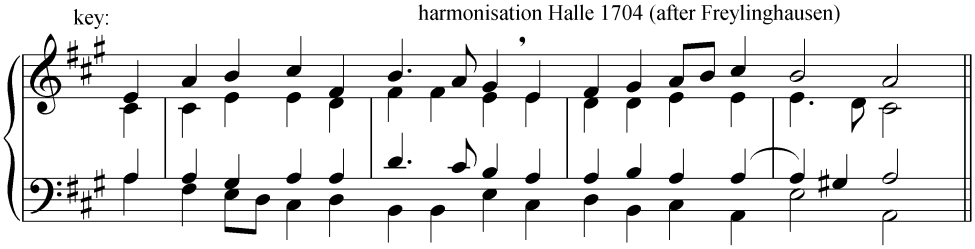
Ermuntre dich, mein schwacher Geist - melody after Johann Schop 1641
harmonisation after Gottfried Vopelius (1645-1715)

key:



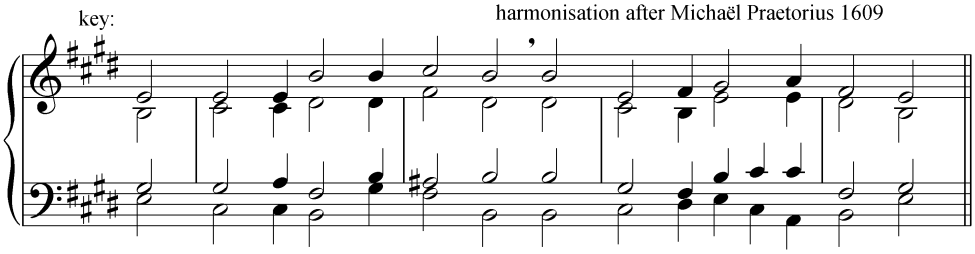
Du Lebensbrot, Herr Jesu Christ - melody after Peter Sohr 1668
harmonisation Halle 1704 (after Freylinghausen)

key:



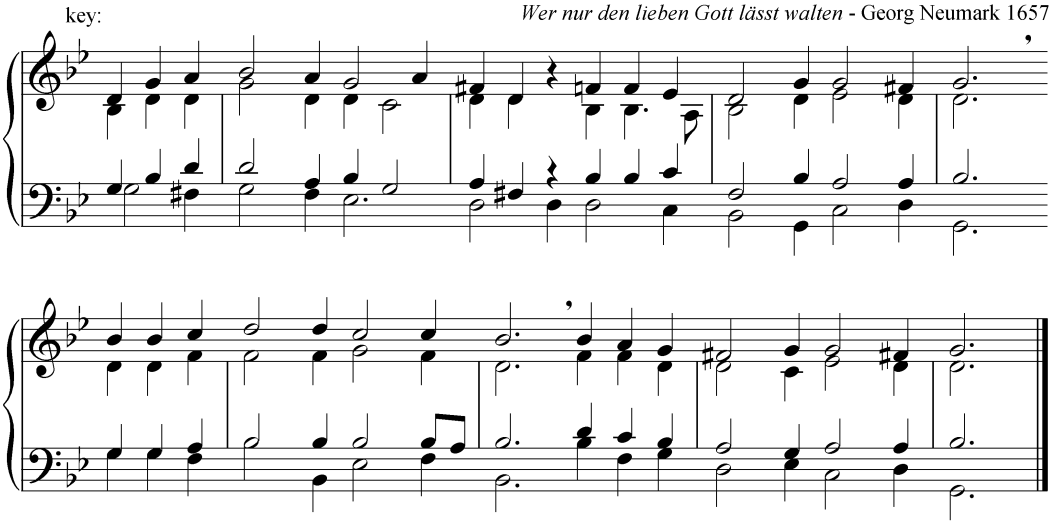
O Lamm Gottes unschuldig - melody Magdeburg 1545
harmonisation after Michaël Praetorius 1609

key:



Wer nur den lieben Gott lässt walten - Georg Neumark 1657

key:

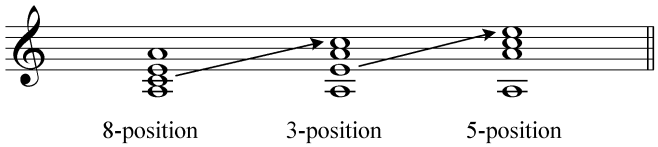


11

CADENCES IN THE MINOR KEY

The minor triad in the 8-, 3- and 5-position
I-V-I and I-IV-V-I in the minor key

By doubling the root of the minor triad, we can play the four-part chord in three positions while retaining the root in the bass:



EXERCISES:

1. Play by ear the 8-, 3- and 5-positions of the triad of A minor. Proceed clockwise around the circle of 5ths, playing the soprano, alto and tenor with the r.h. and the bass with the l.h.

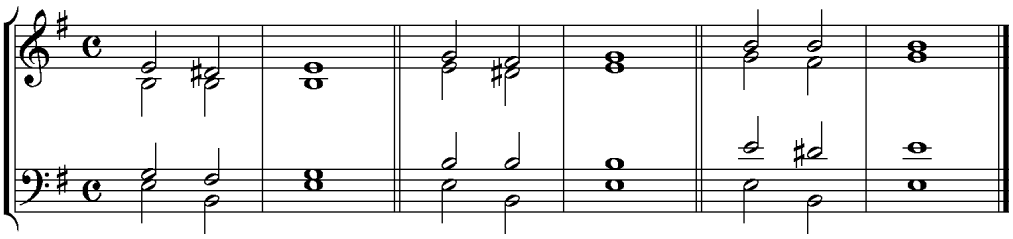
2. Practise the 8-positions separately via the circle of 5ths.

3. Practise the 3-positions separately via the circle of 5ths

4. Practise the 5-positions separately via the circle of 5ths

5.* Repeat ex.1-4 with a solo stop and pedals

In the minor key, the I-V-I progression is as follows (for the sake of variation the example is in the key of E minor):

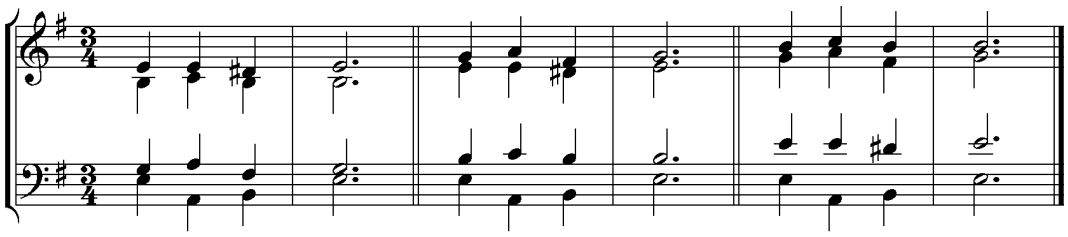


The 3rd on V is D sharp, the leading note in the key of E minor. The voice in which D sharp occurs therefore moves in semitones: E - D sharp - E. The note B, common to both chords, remains in the same voice. The third upper part moves in semitones from G to F sharp and back. In other words: all three upper parts move by the smallest possible steps.

EXERCISE:

Practise these cadence progressions in the minor keys of A, E, B, F sharp, D, G, C and F. Begin by repeating the harmonic minor scale of each key.

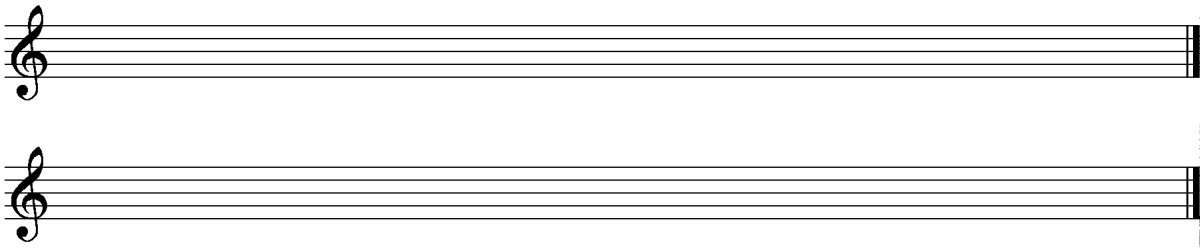
Our point of departure is the harmonic minor scale. In the (I-) IV-V-I minor cadence, therefore, there is a minor triad on IV:



Note the part writing. The bass has the root notes of the I-IV-V-I progression and therefore leaps twice. One of the three upper parts moves from the tonic to the leading note and back. The other two voices move to the nearest note in the following chord, thus creating smoothly flowing voices without unnecessary leaps.

EXERCISES:

1. Notate the ascending and descending harmonic minor scales of C and F. We employ the key signature of the relative major key.



2. Play by memory the harmonic minor scales of A, E, B, F sharp, D, G, C and F.

3. Practise the above (I-) IV-V-I cadences in the minor keys of A, E, B, F sharp, D, G, C and F.

4.* Repeat the (I-) V-I and (I-) IV-V-I cadences with a solo stop and pedals.

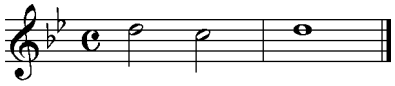
12

WRITING A BASS (i)

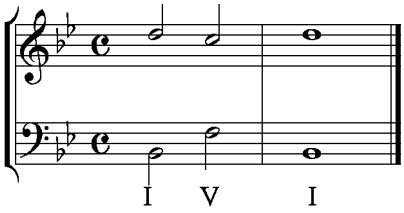
The I-V-I progression in major and minor keys

In order to harmonise a melody, to support it with appropriate chords, we begin by writing a bass part. Chord progressions are determined firstly by the given melody, and secondly by the bass. Writing our own bass is the first step towards determining our own accompaniment to a melody.

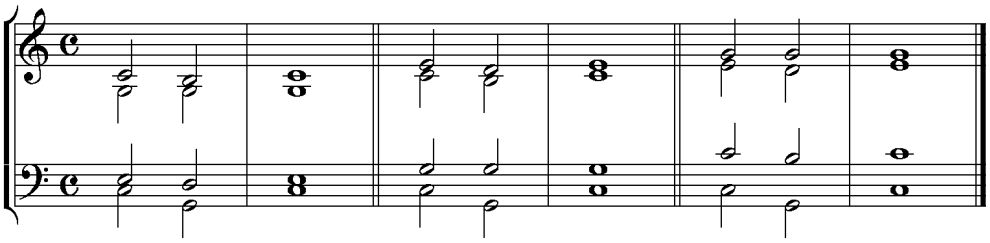
This chapter contains short exercises with three given notes in the soprano. The reader must first establish the key, and then notate I-V-I in this key as the bass. Since the first exercises are all in major keys, the key signatures are unambiguous. The following soprano:



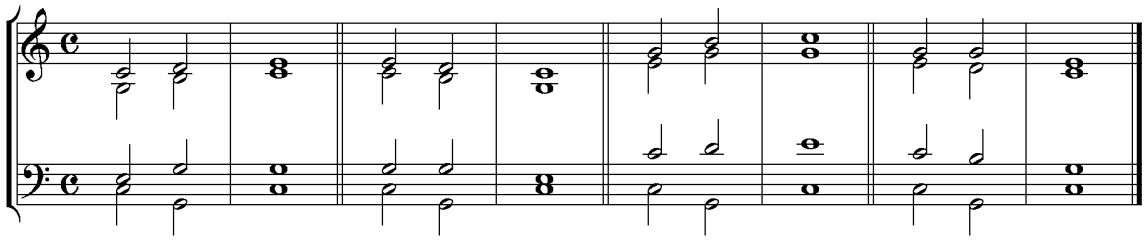
allows only I-V-I in the key of B flat major:



Correct key recognition is essential, especially if the soprano follows a slightly different course to our first cadence exercises. The three positions of the I-V-I progression already given:

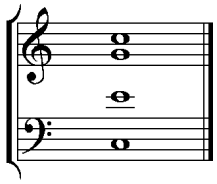


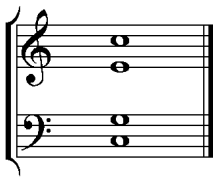
may be combined in various ways to create new part writing in the soprano, and consequently in the alto and tenor too:



We continue to make use only of 3-, 5- and 8-positions of the triad, with the root in the bass. The part writing, however, is slightly freer: the note G, common to all three chords, now moves from one part to another.

The above chords employ **closed spacing**. This term implies that the distance between the soprano and tenor is less than an octave; between the soprano and alto, and between the alto and tenor, there is insufficient space to add a note belonging to the triad in question. In **open spacing**, on the other hand, the distance between the soprano and tenor is more than an octave; between the soprano and alto, and the alto and tenor, there is space where a note belonging to the triad has been skipped.

closed spacing: 

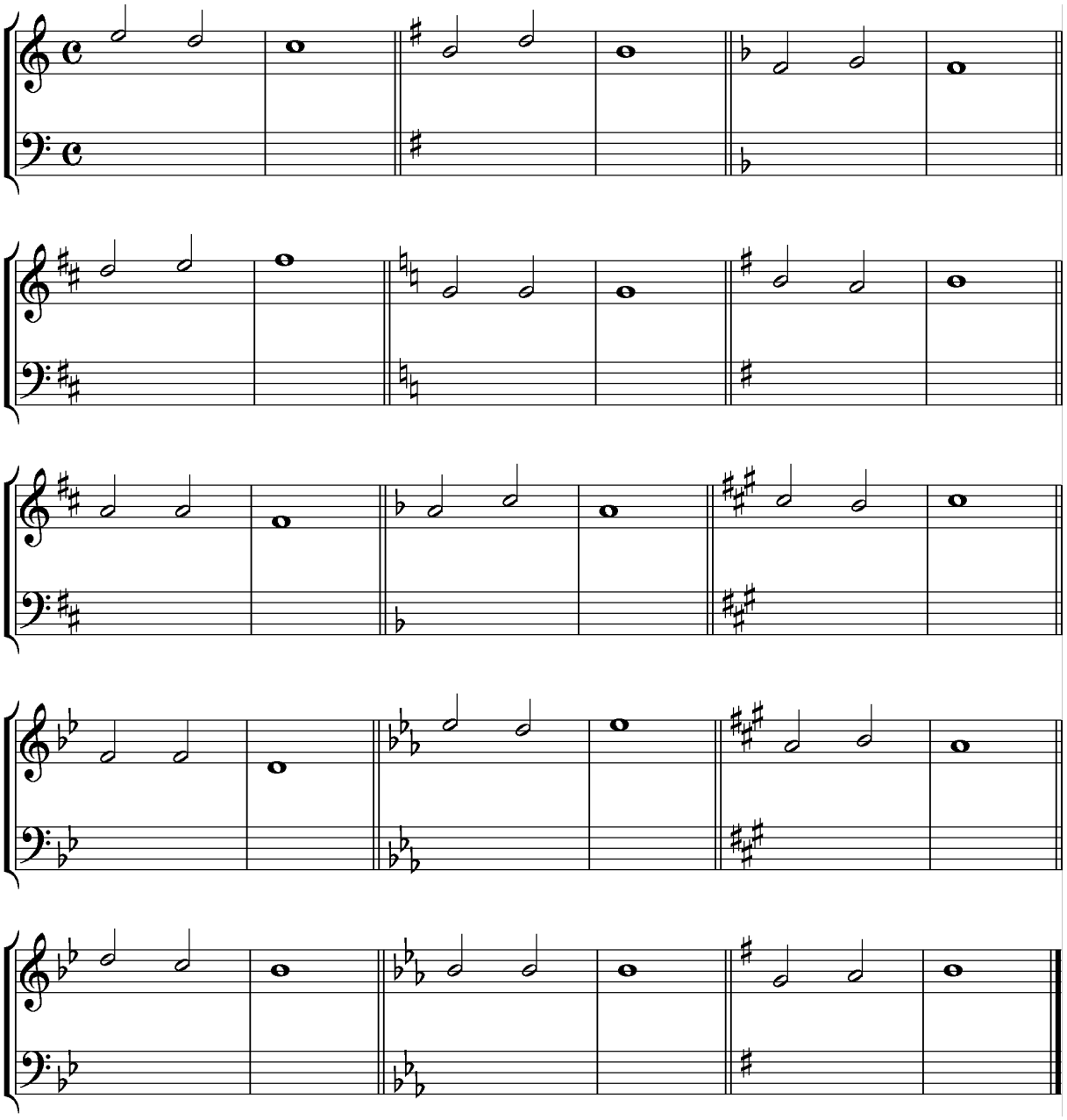
open spacing: 

For beginners in keyboard harmonisation, open spacing can give rise to all sorts of errors. Unless stated otherwise, all exercises in *The Lost Chord* are to be played in closed spacing.

EXERCISES:

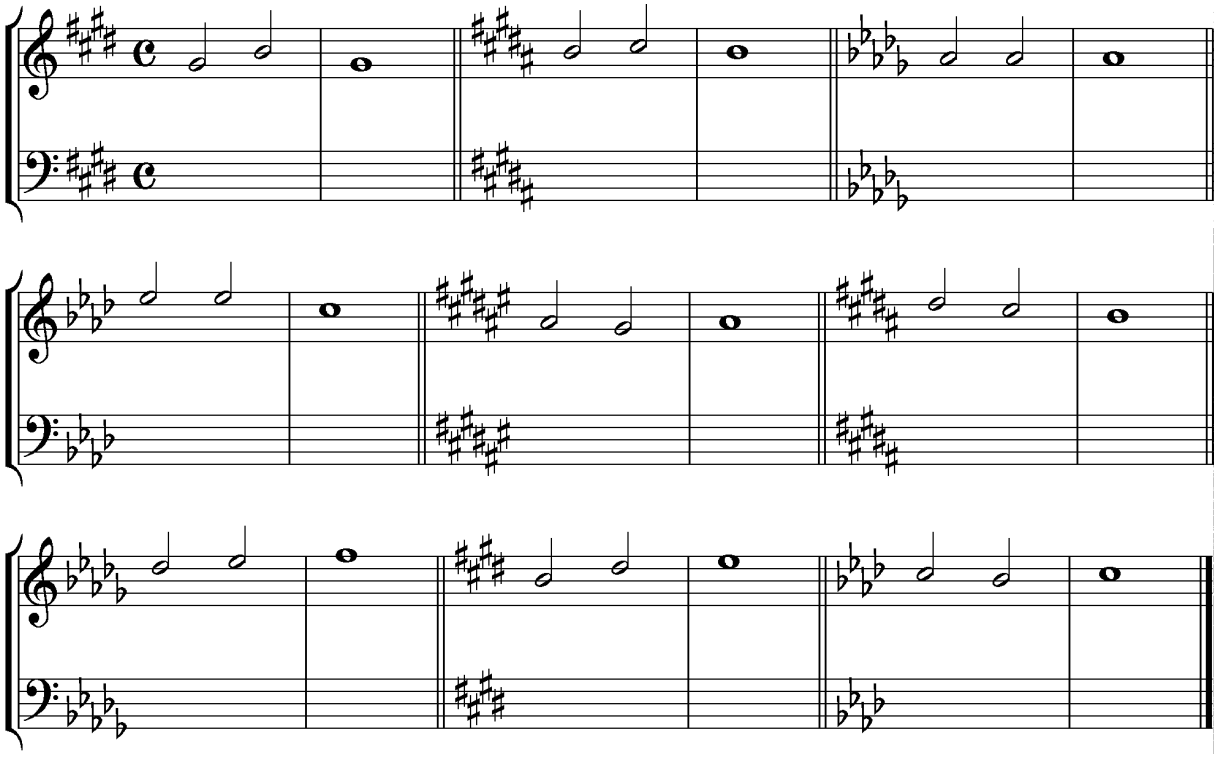
In the following exercises, the bass consists of I-V-I in the relevant major key. Notate the bass and practise in four parts.[+]

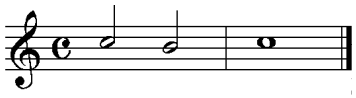
1.



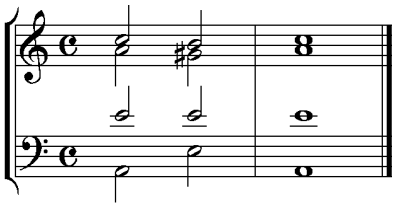
+ The alto and tenor voices should not be written out except in occasional instances in order to become more aware of the part writing.

[2.]+





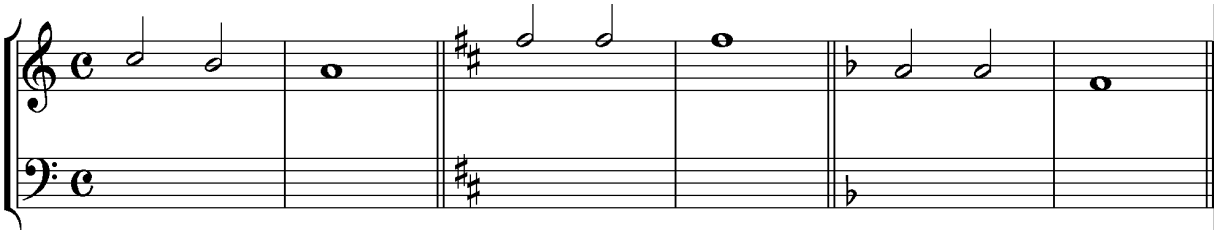
The following exercises are in minor keys. This soprano, therefore, should not be harmonised in C major, but in A minor, implying G sharp as leading note:



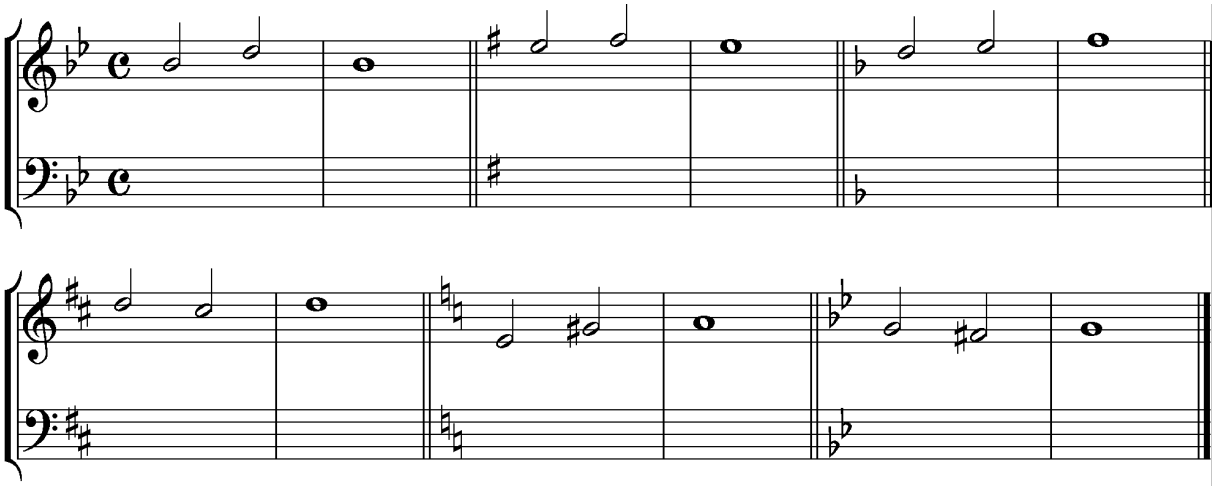
EXERCISES:

In the next exercises, the bass consists of I-V-I in the relevant minor key. Notate the bass and practise in four parts.

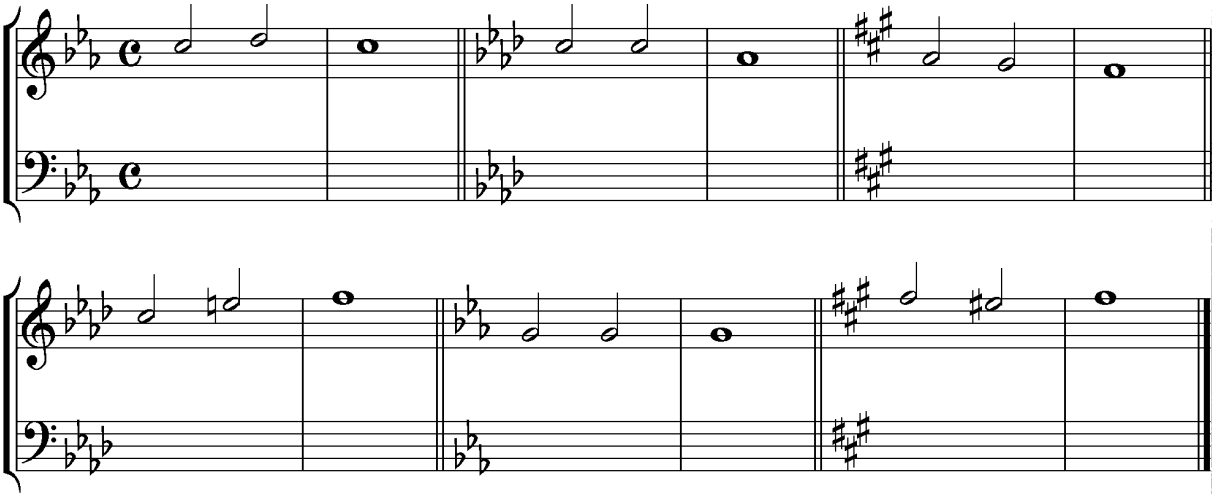
3.



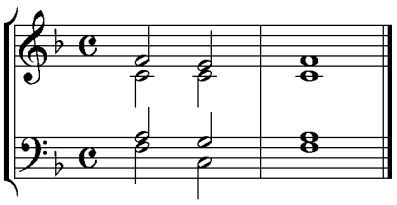
+ Exercises in brackets are in more remote keys. They may be skipped, or reserved for a ‘second round’. Although some keys rarely occur in hymn tunes, figured bass and suchlike, they are of importance for keyboard playing in general.

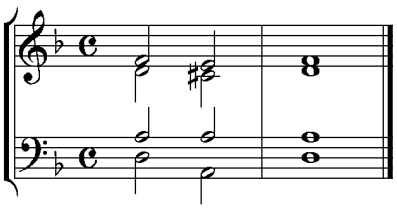


[4.]



The next exercises include both major and minor cadences, requiring extra attention to the key in view of the ambiguous key signatures. Occasionally, a soprano can be harmonised in both major and minor, as the player prefers:

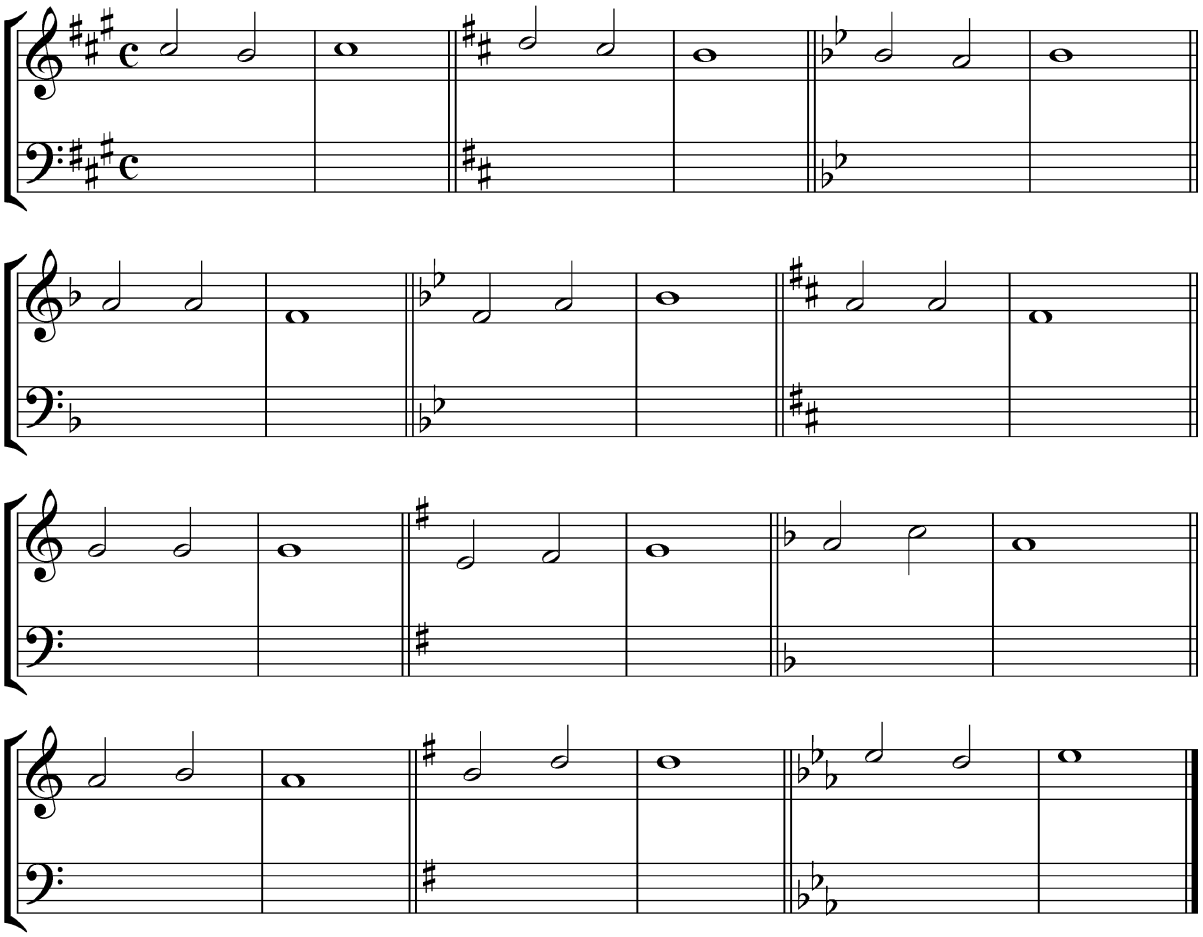




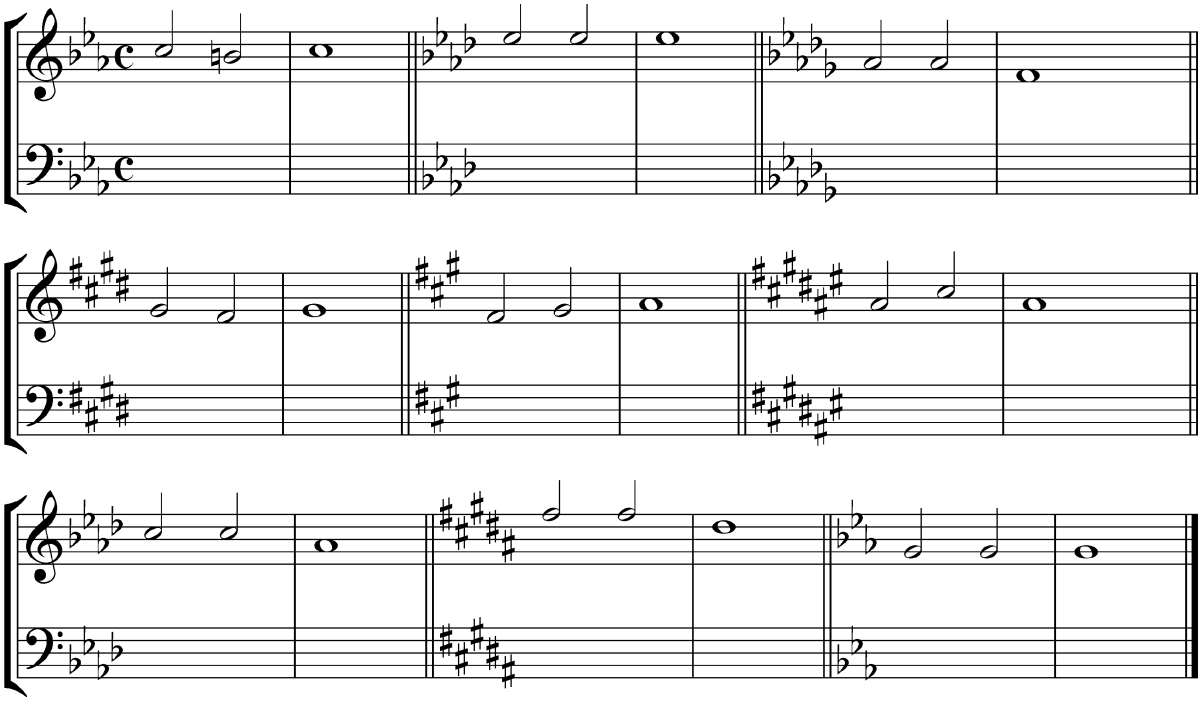
EXERCISES:

Notate I-V-I in the relevant major or minor key in the bass and play the exercises in four parts.

5.



[6]



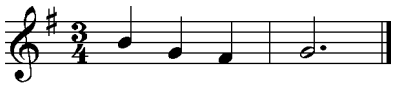
7.* Repeat all exercises in this chapter with a solo stop and pedals.

13

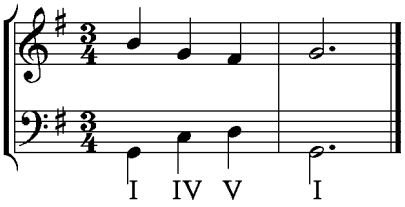
WRITING A BASS (ii)

The I-IV-V-I progression in major and minor keys

In the following exercises, I-IV-V-I in the relevant key must be played in the bass. Thus the following soprano:



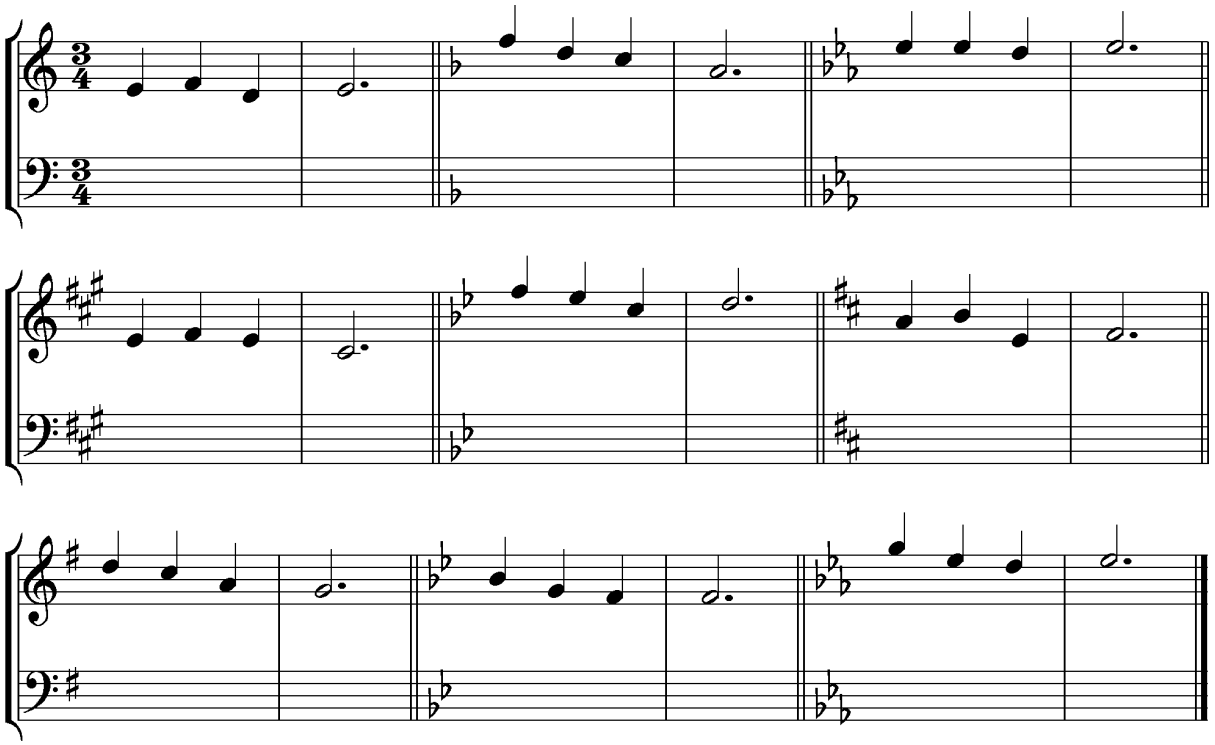
requires I-IV-V-I in the key of G major as bass:



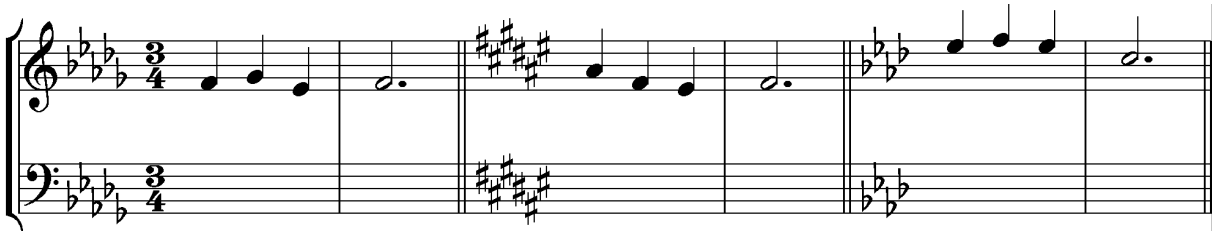
EXERCISES:

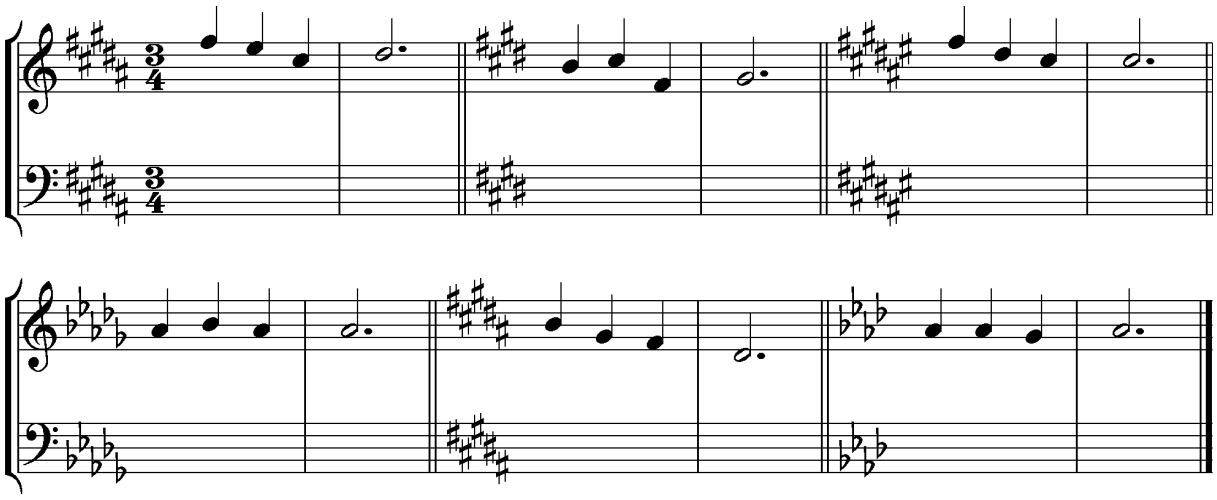
Notate in the bass the degrees I-IV-V-I in the relevant major key and practise in four parts.

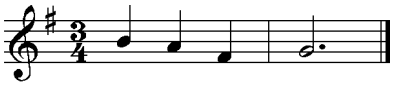
1.



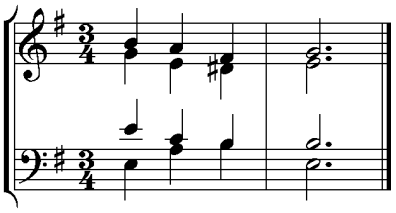
[2.]







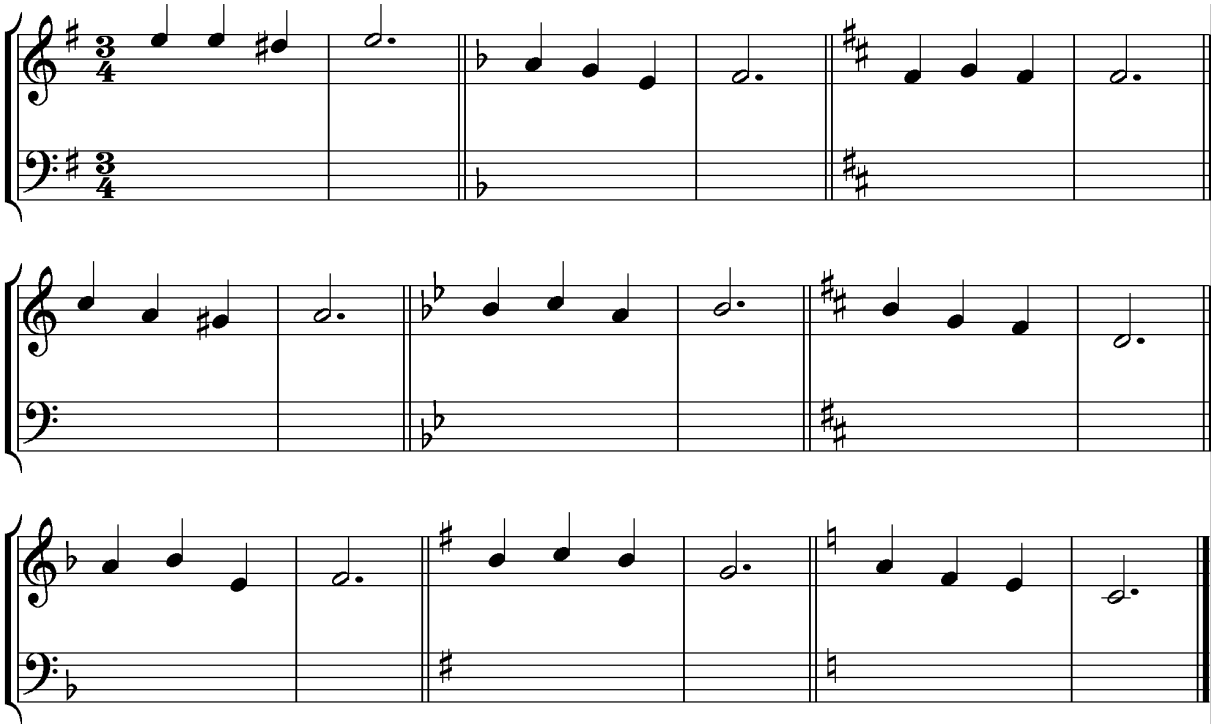
The next exercises are in minor keys. This soprano, therefore, must be harmonised in E minor, implying D sharp as leading note:



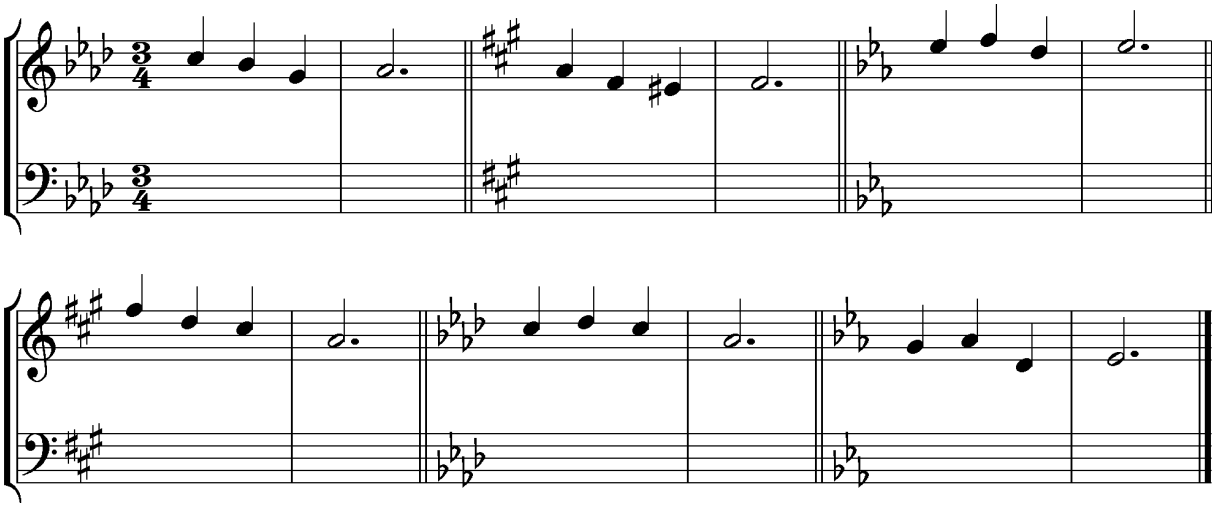
EXERCISES:

Notate in the bass I-IV-V-I in the relevant minor key and practise in four parts.

3.

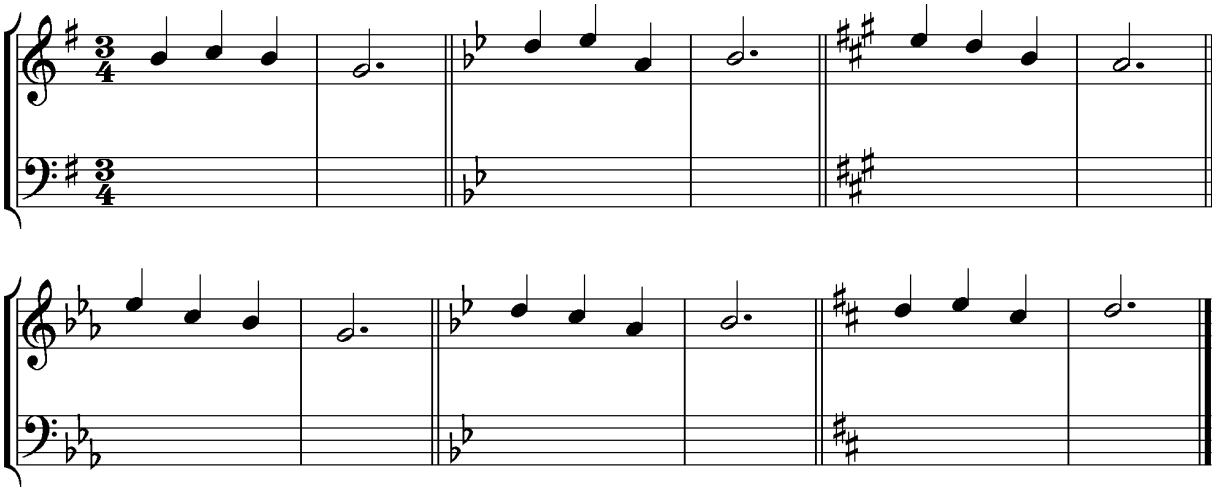


[4.]

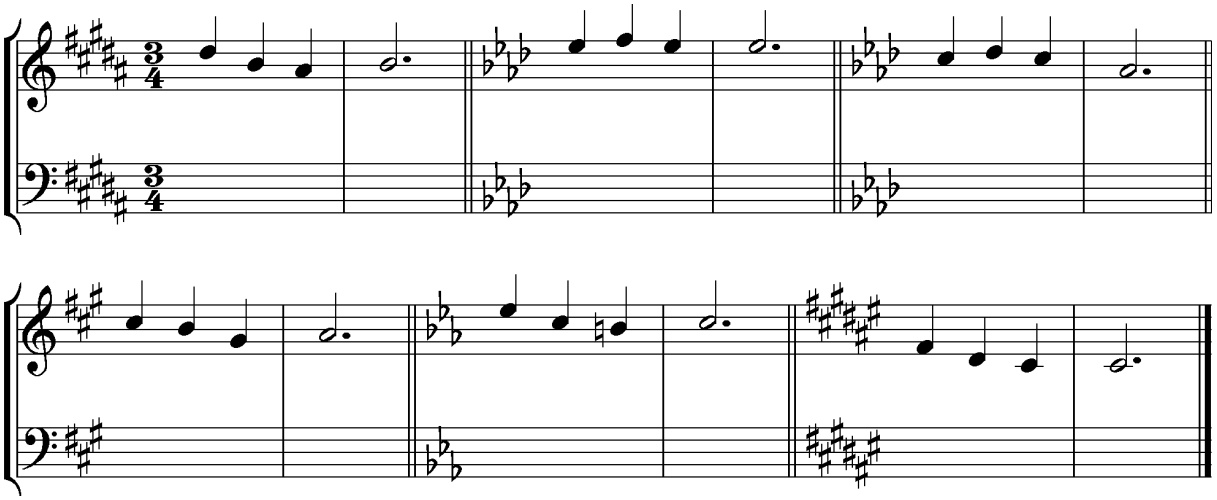


The next exercises include both major and minor cadences. Notate I-IV-V-I in the relevant key in the bass and practise in four parts.

5.



[6.]



7.* Repeat all exercises in this chapter with a solo stop and pedals.

14

FIGURED BASS

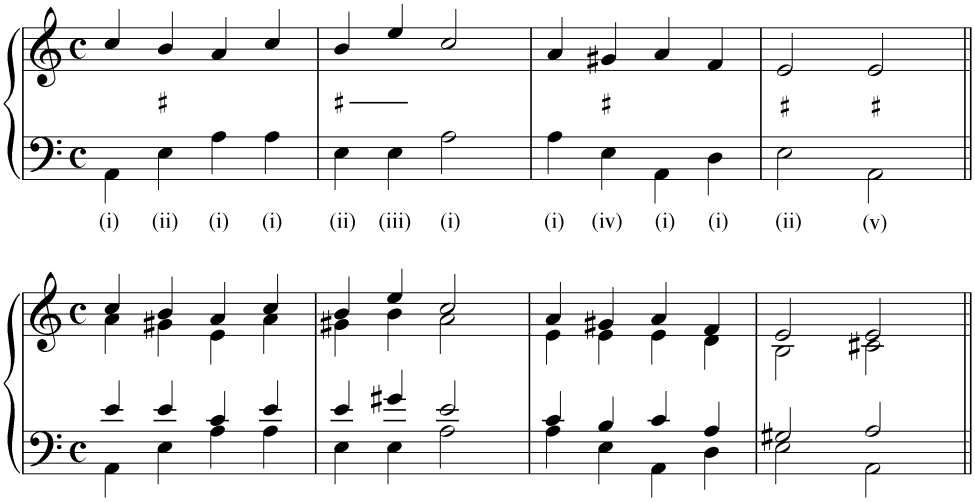
The basso continuo
First principles of figured bass

From the next chapter onwards, symbols of **figured bass** will be employed. The present chapter gives a short introduction to the subject.

In cantatas by Johann Sebastian Bach, for example, we are used to hearing instrumental bass parts which support the entire composition more or less without interruption, whatever variation there may be in the vocal and instrumental scoring of the upper parts. These continuous bass parts are called the **basso continuo**, or simply the 'continuo'. The central role of the basso continuo is one of the main characteristics of the music of the Baroque era.

The keyboard player was expected to perform the basso continuo from a **figured bass**. In the original scores, the continuo part is simply a bass line, usually provided with numbers and accidentals. These 'figures' indicate precisely what chord is to be played above each bass note, while allowing the keyboard player to decide for himself how many voices to play and in what position, and whether to improvise embellishments etc. (Modern editions often provide a realisation of the figured bass for players unable to make their own.)
The basso continuo, so fundamental to the performance of Baroque music, was not the exclusive domain of the keyboard player. A keyboard instrument - usually harpsichord, organ or both - could be complemented (or replaced) by other chordal instruments such as the lute or harp, and the bass line itself was usually played by bass strings and/or bassoon as well. Composers were often not specific about this. But it was common practice to employ an extensive continuo group, providing plenty of opportunity for variation in the performance.

Before we progress, a number of general rules on figured bass are of importance. Compare the following two examples, of which the second is a four-part keyboard realisation of the first:



(i): Where no instruction is given by means of numbers or accidentals, the root position of the triad is implied. The first chord, therefore, is the triad on the tonic in the key of A minor, to be played in the 3-position in view of the given soprano.

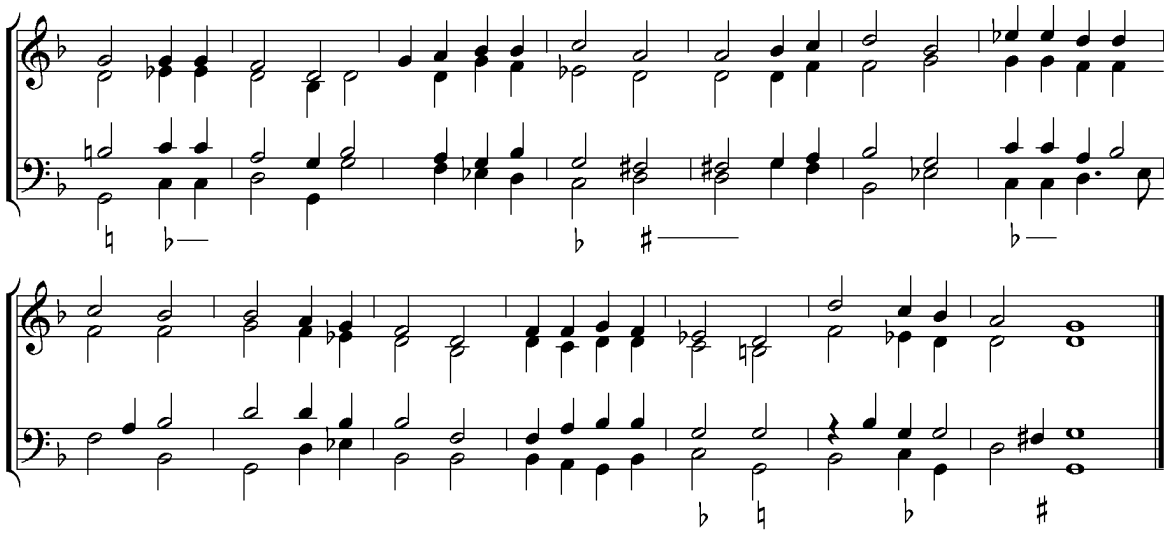
(ii): A sharp, flat or natural without an adjacent number refers without exception to the 3rd above the bass. This means that at (ii) it is superfluous to write the number 3 next to the sharp (although this is sometimes encountered). In our example, the major third G sharp is required instead of G (as one would anyway expect in the key of A minor).

(iii): A horizontal line means that the previous chord remains ‘in force’, irrespective of any changes in the parts. But the player is free, and indeed sometimes obliged, to change the position of the chord in question (see the four-part realisation). In all cases, the player is free to strike the chord again.

(iv): Once again, the major 3rd G sharp is required. This really goes without saying, since G sharp is already present in the soprano. (In this tutor, all accidentals are indicated for the sake of completeness. In scores and figured bass parts this may not be the case.)

(v): The major 3rd C sharp is required rather than C. In compositions in the minor key, the final triad on the tonic often has a major 3rd; we call this the **Tierce de Picardie**, a term referring to the assumed origin of this phenomenon. This is a matter of artistic freedom that does not alter the fact that a composition is written in the minor key.

In accordance with the above rules, the many altered 3rds in Johann Crüger’s *Herzliebster Jesu, was hast du verbrochen* may be indicated as follows:



The relatively large number of accidentals is partly due to the fact that Crüger does not comply with ‘our’ modern rules! Firstly, although the setting is in G minor, he commences with the G major triad; secondly, he notates the note E flat (VI in the harmonic minor scale of G) each time it occurs, rather than including it in the key signature at the beginning as we would do today. This was common practice in the 17th century, giving rise to key signatures that differ from modern custom.+

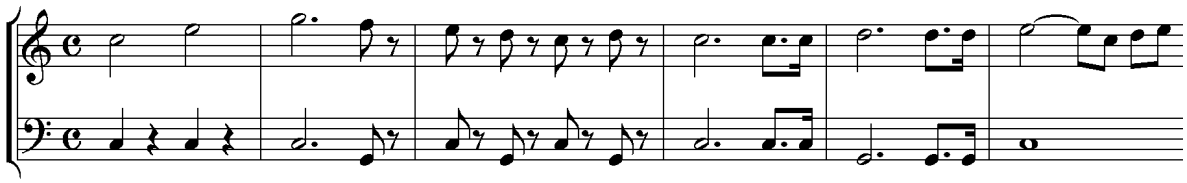
+ This practice lingered on in the eighteenth century: Bach’s ‘Dorian’ Toccata and Fugue owes its name to the fact that the key of D minor is not indicated with a B flat as key signature; rather, Bach indicates B flat with an accidental as required in the course of the composition.

15

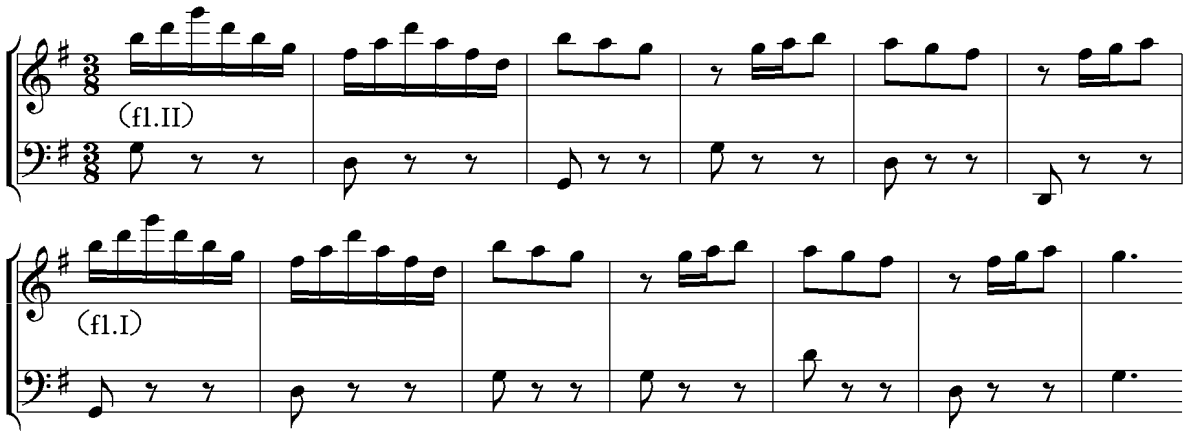
SHORT EXERCISES WITH I, IV AND V

I, IV and V with a given soprano and bass

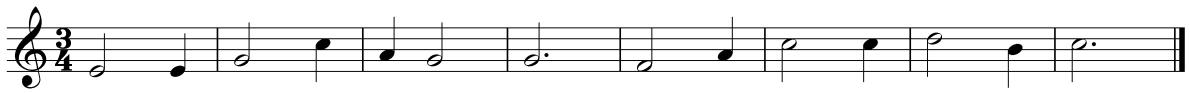
In the preceding chapters, we practised chord progressions by playing the cadence formulas I-V-I and I-IV-V-I. Although all scales have four other degrees (II, III, VI and VII), there is much to be harmonised with I, IV and V, and we have three positions of each triad at our disposal. Many wonderful melodies of Western music are based on no more than these three degrees. Beethoven begins the final movement of his Fifth Symphony as follows:



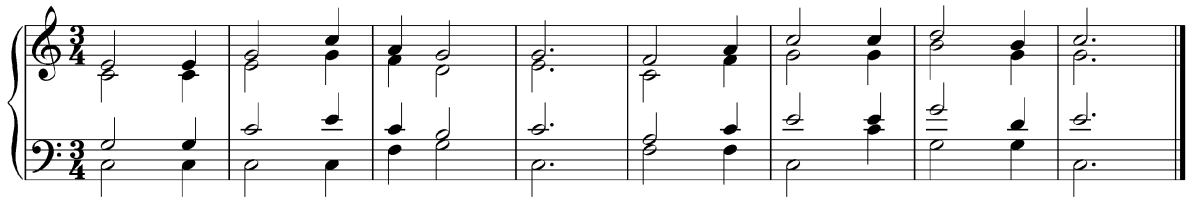
and Bach is similarly ‘simple’ at the beginning of the Fourth Brandenburg Concerto:



We too can now create our own musical phrases by using only I, IV and V. The following simple soprano:



can be harmonised as follows:



We employ the 3-, 5- and 8-positions of I, IV and V, exactly as in the cadence formulas. The only difference is that we now juxtapose different positions of the same triad (for example: three positions of degree I in bars 1 and 2).

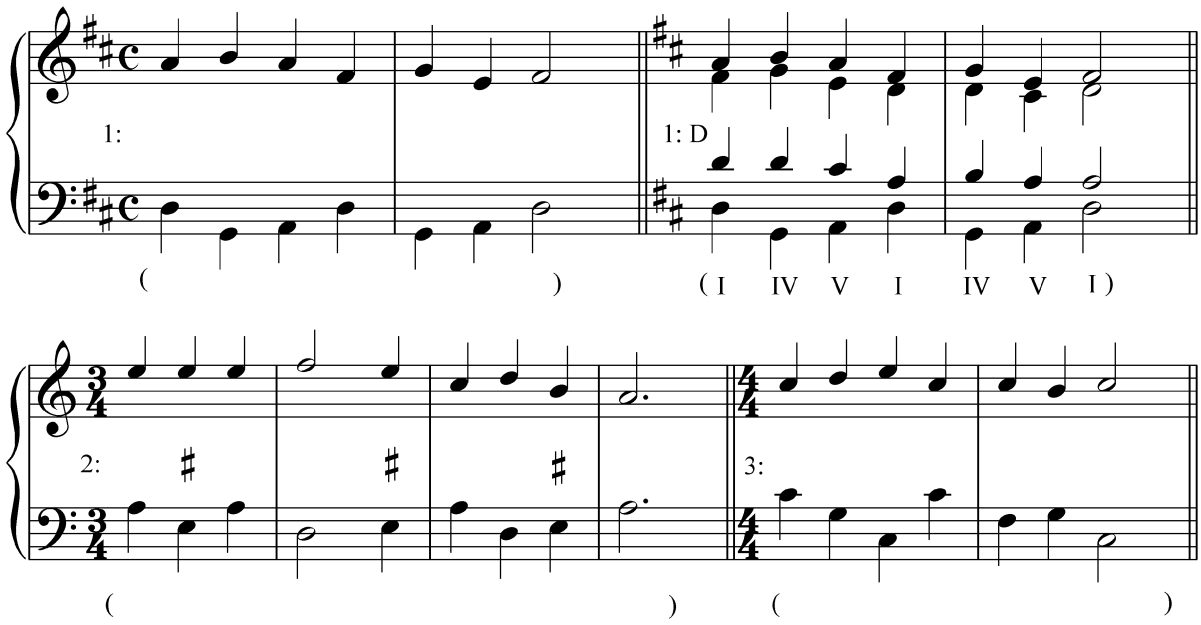
In our example, the bass moves mostly in **contrary motion** in relation to the soprano. In other words, if the soprano goes upwards, the bass usually moves downwards, and vice versa. In closed spacing, the alto and tenor follow the direction of the soprano, creating contrary motion between the soprano, alto and tenor on the one hand, and the bass on the other. Although contrary motion is not (and cannot be) a prerequisite, it is of great importance in order to create healthy, strong harmonic progressions, and to avoid certain mistakes in the part writing that will be discussed in ch.18.

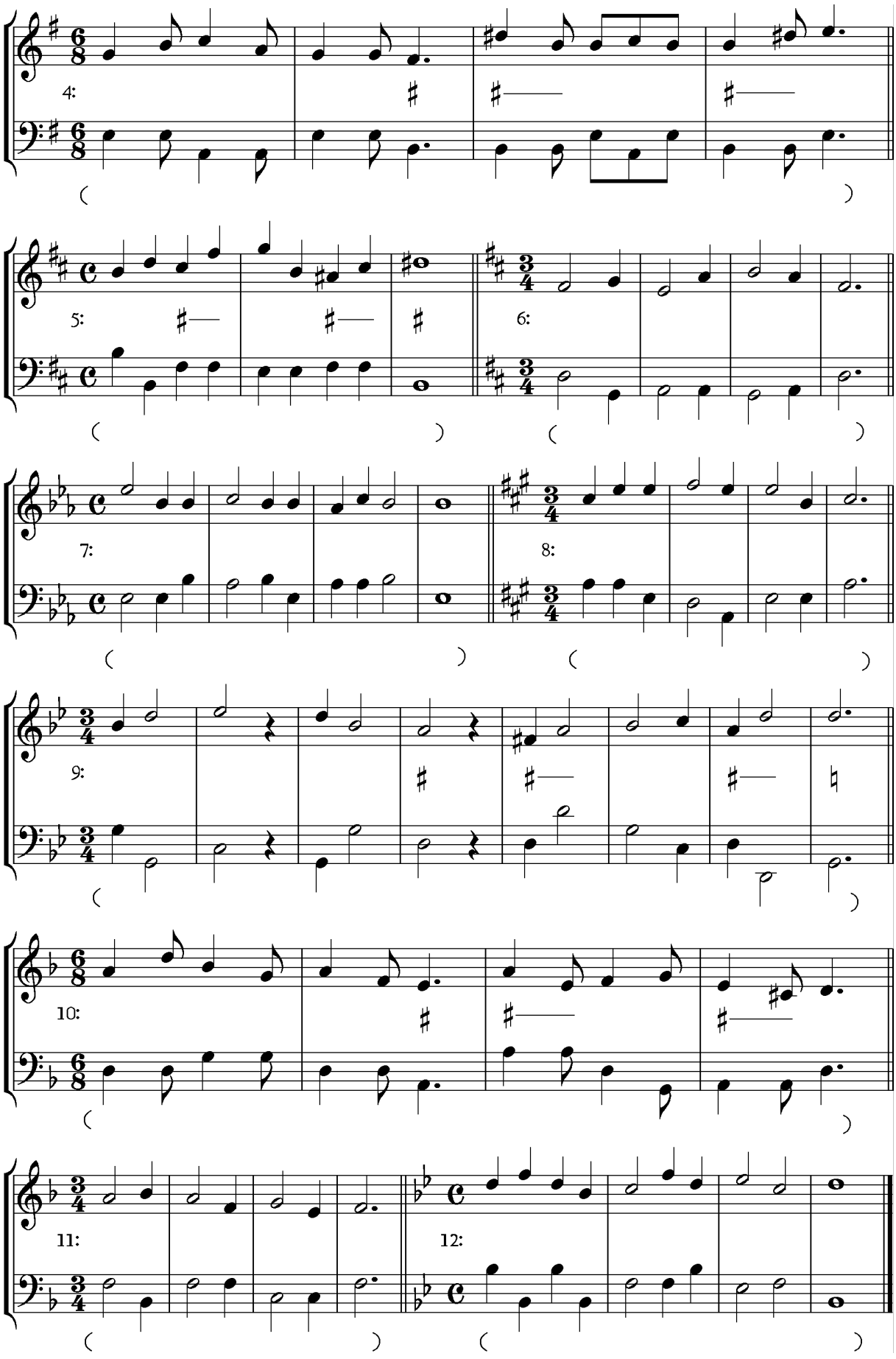
In closed spacing, the soprano, alto and tenor should usually be played with the r.h. and the bass with the l.h., as has already been said. This helps us to oversee the chord progressions and to physically experience the contrary motion between the three upper voices and the bass. Naturally, there are exceptions, and in the above example the player will find it easier to play the rather low tenor in bar 1 with the l.h., with the r.h. taking over in bar 2. But it is also important that the r.h. becomes accustomed to leaping from one chord position to the other. On the organ, if the hand and arm are relaxed, such leaps can be played without finger substitution, helping the organist to cultivate a clear, *non legato* sound while avoiding a choppy, rigid touch.

EXERCISES:

1. Playing traditional hymns and chorales helps us to develop an ear for good harmonic progressions. Early settings, particularly from the 16th and 17th centuries, correspond closely to the material in the first two volumes of *The Lost Chord*. Learning to make our own harmonisations is primarily a question of listening: there is no set of rules that can replace the ear. When playing a setting or harmonisation exercise, listen particularly to the bass line, with its frequent contrary motion and cadential patterns.

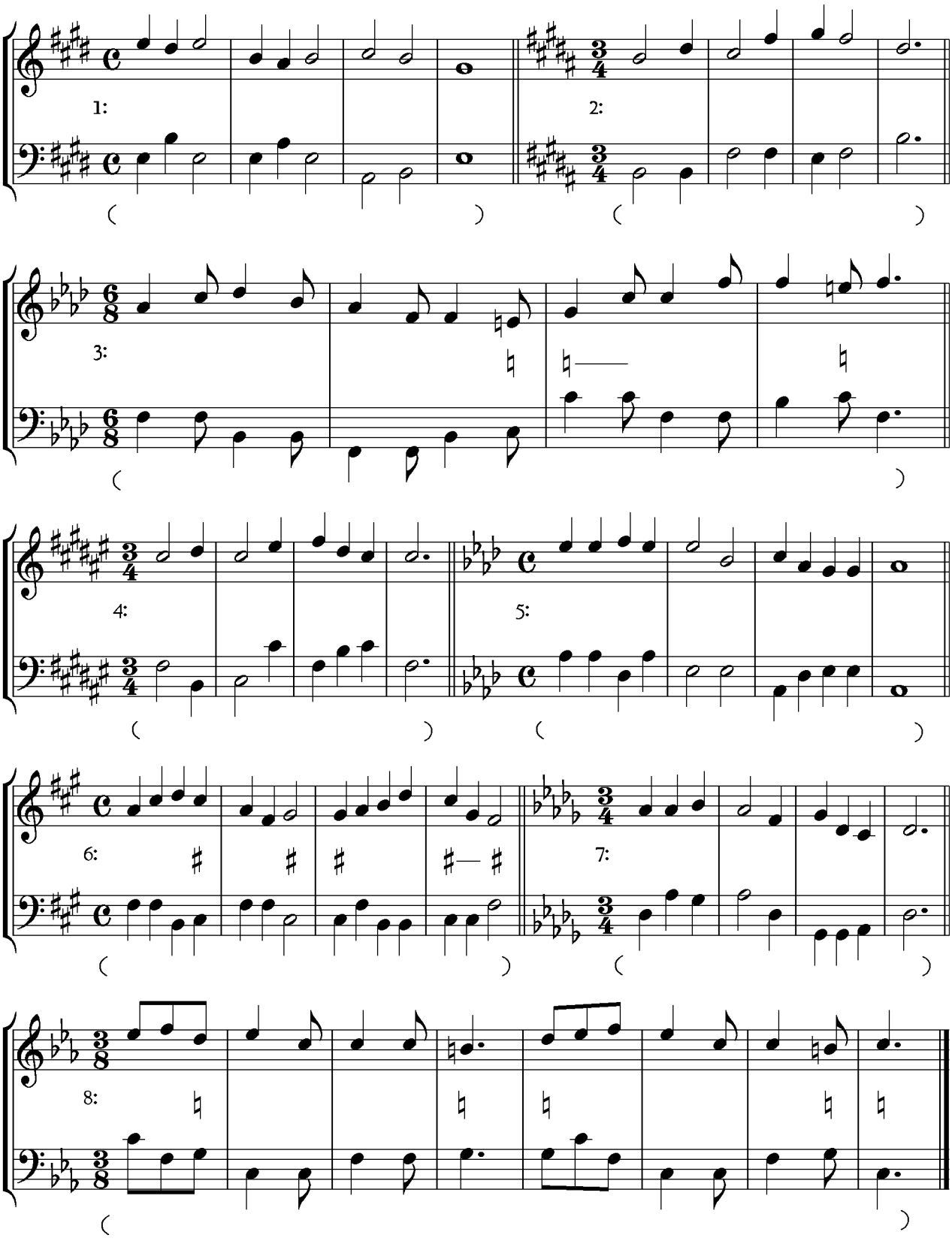
2. Play the following phrases in four parts. Before beginning each exercise, write down the major or minor key next to the exercise number and add the degrees of the scale between the brackets below the bass. Degrees are numbered according to the ascending scale: we count upwards from I! Try to avoid writing out the alto and tenor - the four-part realisation of the first exercise is given only as a clarification.





3.* Repeat ex.2 with a solo stop and pedals.

[4.] Play the following exercises in four parts. Before beginning, note the key and the degrees of the scale.



[5.*] Repeat ex.4 with a solo stop and pedals.

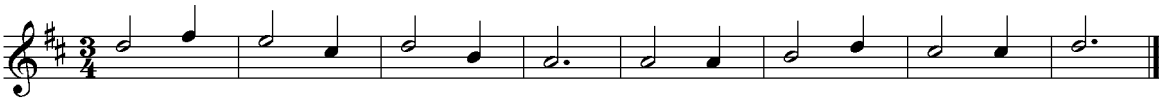
16

WRITING A BASS (iii)

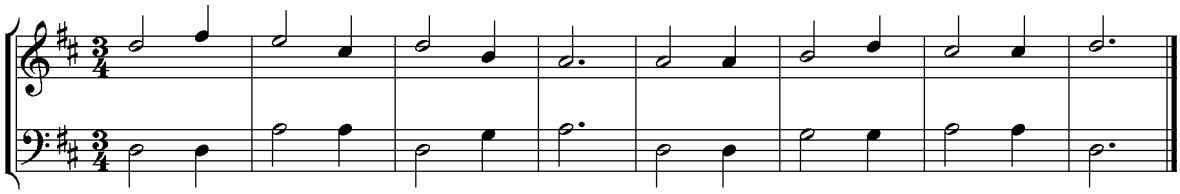
Harmonising short phrases with I, IV and V

In this chapter, the degrees I, IV and V are used to write a bass to a given soprano. Although the harmonisation is determined by the soprano, we are already able to make some choices of our own. The more degrees we have at our disposal (as from the next chapter), the more opportunity there will be to use our own imagination.

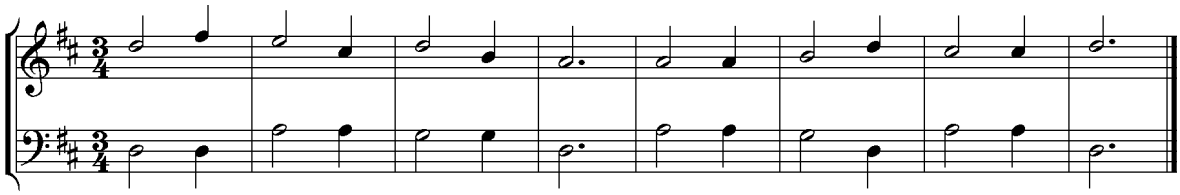
The following phrase:



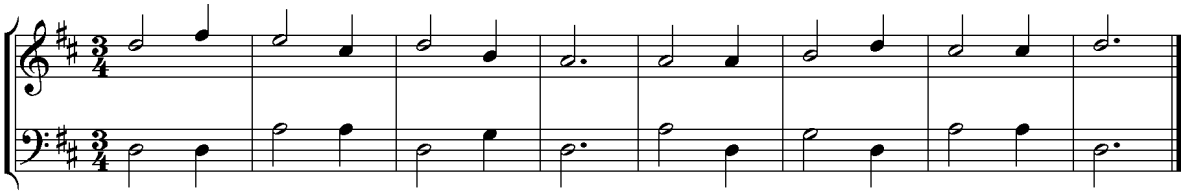
can be harmonised in the following way:



or thus:



or as a combination of the two:

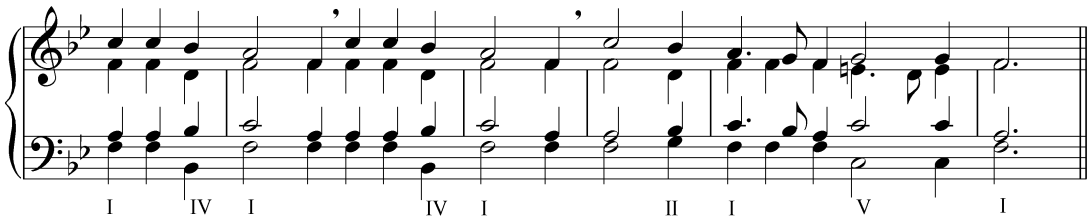


The final cadence can usually be harmonised only in one way: the key is clear, and the required degrees fit in accordance with the cadential formulas already practised.

EXERCISE:

Play the above examples in four parts. Listen to the bass line and compare the progressions.

The relative simplicity of these harmonisations is not merely for the sake of the reader who has only just embarked on this voyage of discovery. While 16th- and 17th-century settings usually employ more degrees, composers were fond of repeating the same degree, as the beginning of Giovanni Giacomo Gastoldi's setting of *In dir ist Freude* illustrates:

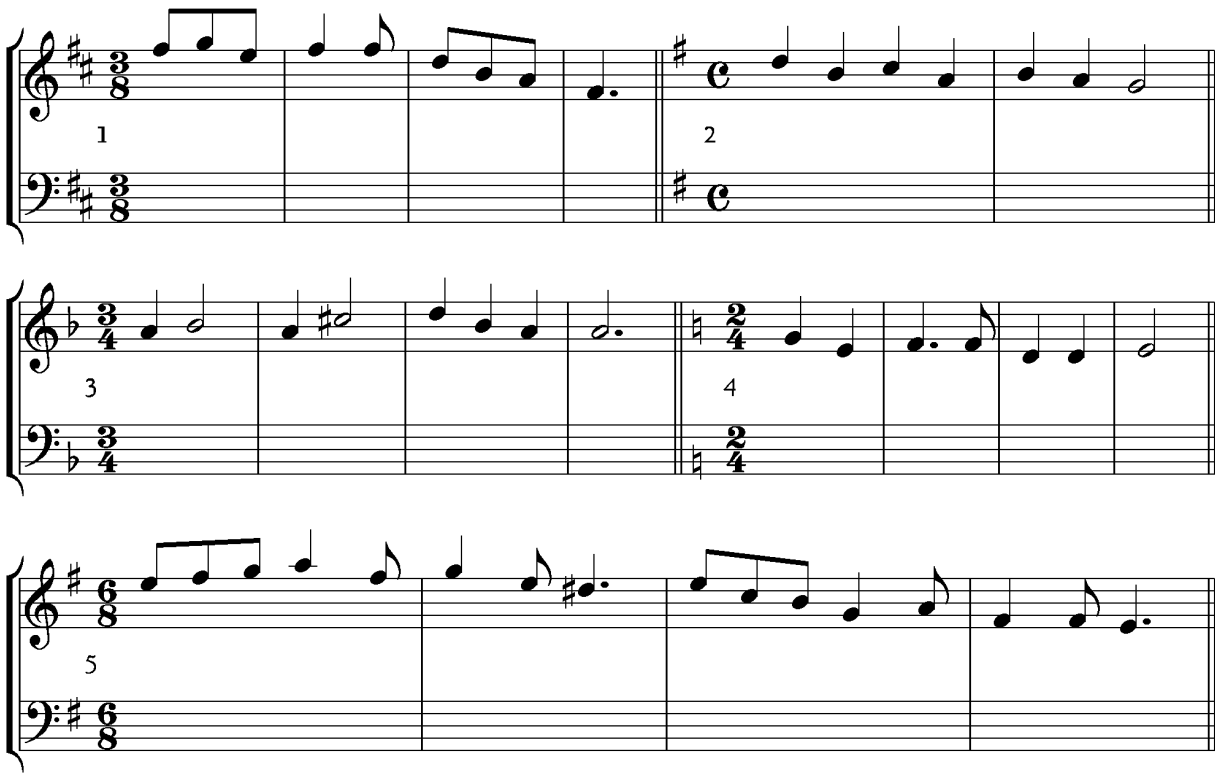


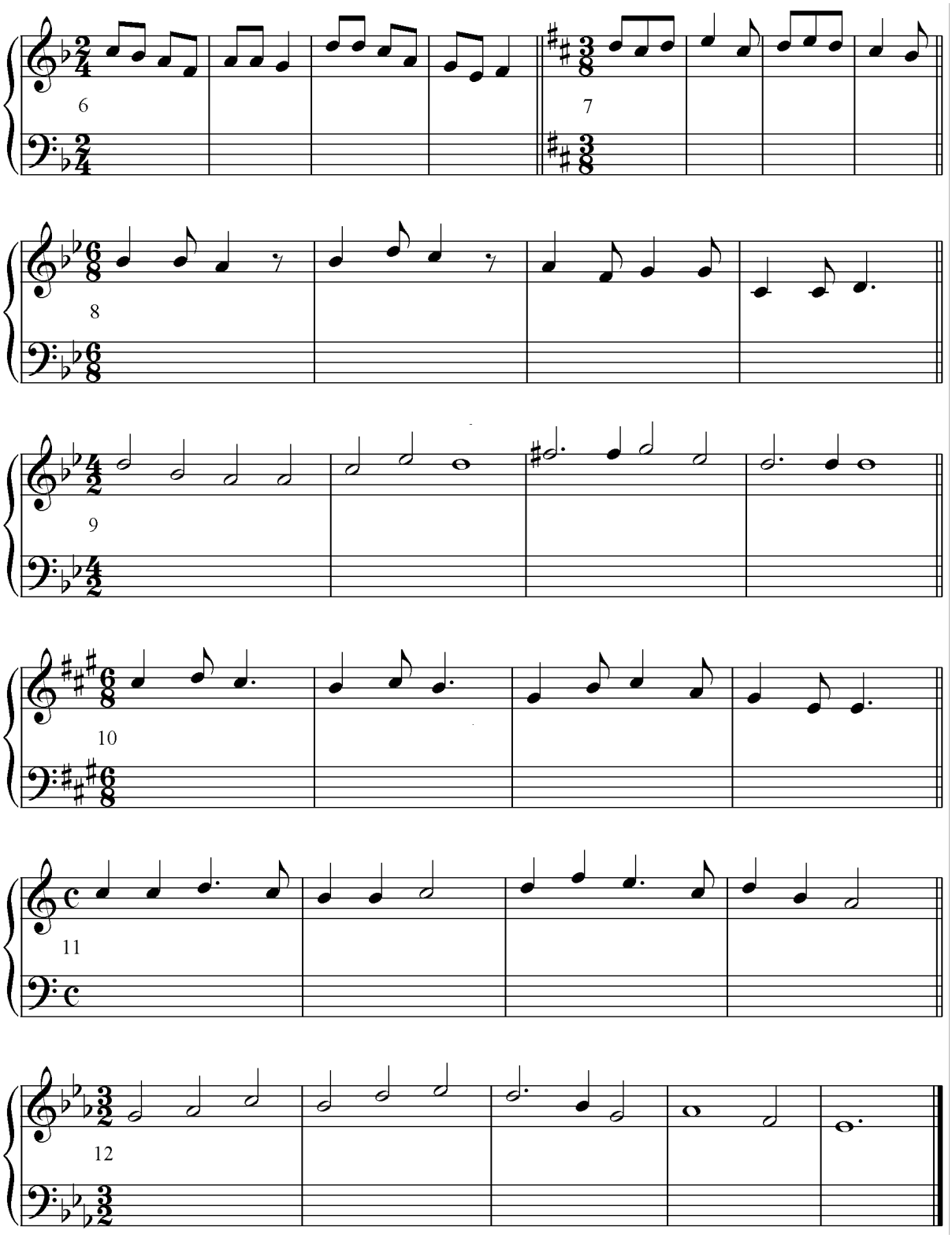
Gastoldi's harmonisation, published in 1591, is of striking simplicity. Other than the key signature suggests, the setting is in the key of F major (see p.45). Gastoldi's almost exclusive use of I, IV and V is characteristic of the entire setting, and matches perfectly the simplicity of the melody. For the listener of the 21st century, the beauty of such simplicity is a taste well worth acquiring, since it enables us to appreciate the subtleties of harmonisations by great composers including Tallis, for example. It would be unwise to consider such masterly miniatures as rather primitive overtures to the 'achievements' of the 18th and 19th centuries. Gastoldi's *In dir ist Freude* is a **note-against-note** harmonisation: with the exception of a single quaver, each note of the melody is supported by its own chord.

EXERCISES:

1. Write a bass to the following soprano parts. Observe the following (provisional) rules:
- The bass begins on the tonic of the relevant key.
- The bass ends with the V-I cadence.
- Each note of the soprano is supported by its own bass note ('note-against-note').
- Chords may be repeated.

In exercises in minor keys, it is advisable to note accidentals such as the leading note (see Crüger's setting on p.45).

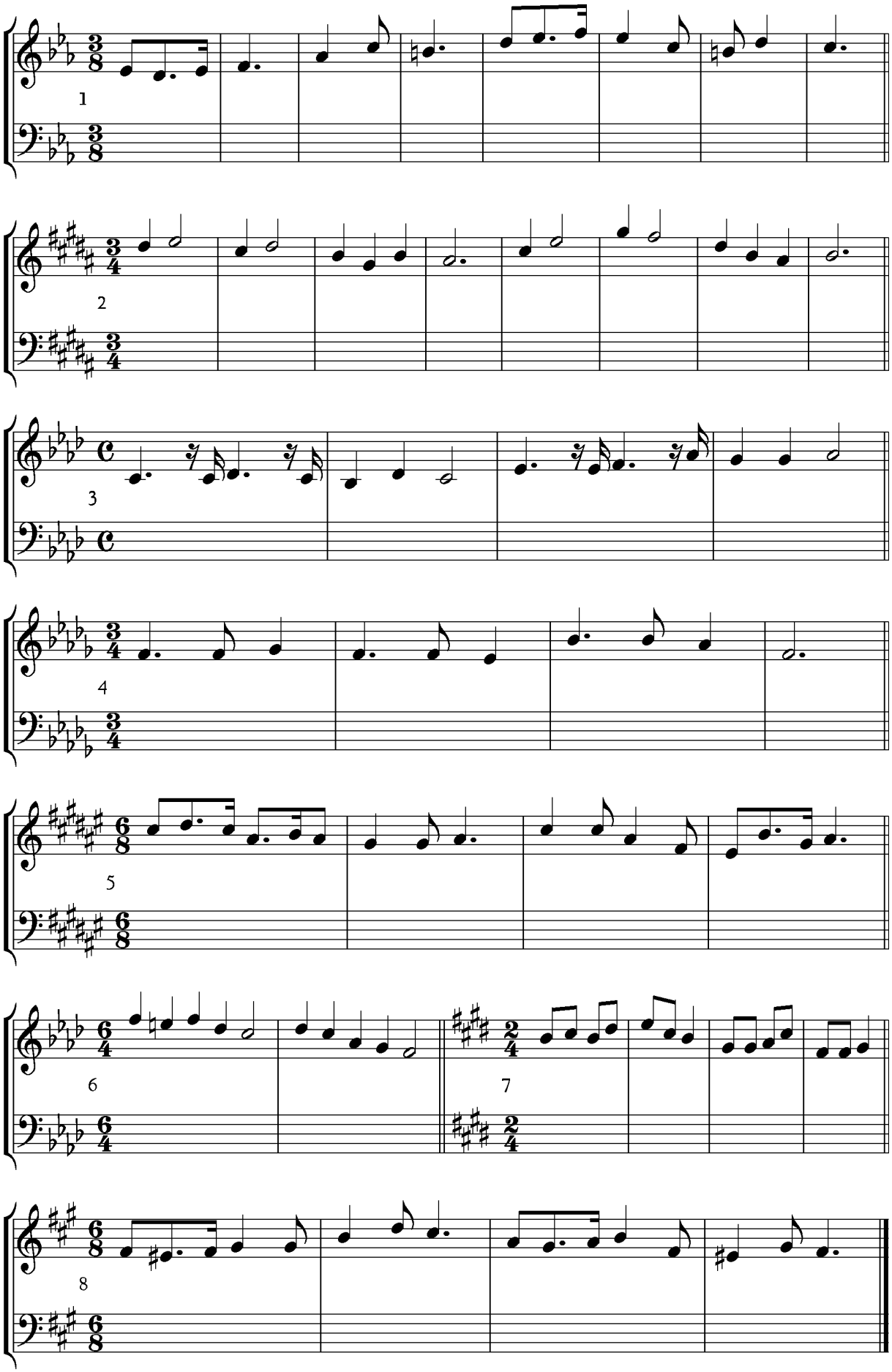




2. Play the above exercises in four parts.

3.* Repeat the exercises with a solo stop and pedals.

[4.] Write a bass to the following soprano parts and practise in four parts.



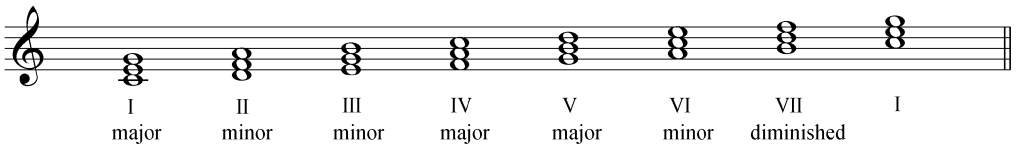
[5.*] Repeat ex. 4 with a solo stop and pedals.

17

THE TRIADS ON II, III AND VI

Major, minor and diminished triads
The degrees II, III and VI

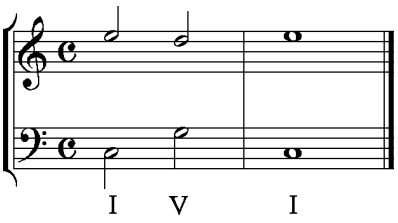
If we play a triad on each degree of the scale of C major, using only the notes belonging to that key, we hear the following chords:



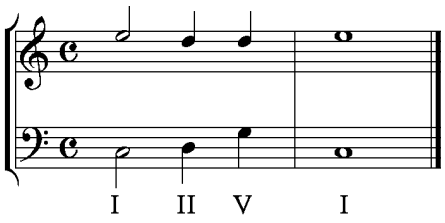
In the major key, the triads on I, IV and V are major triads and those on II, III and VI are minor triads.
The triad on VII is made up of two minor 3rds, giving rise to a diminished 5th between the outer parts. This **diminished triad** sounds more tense than the major and minor triads, and it is a special case requiring rules of its own. Since we do not need the triad on VII for the moment, it will be discussed in Part II.

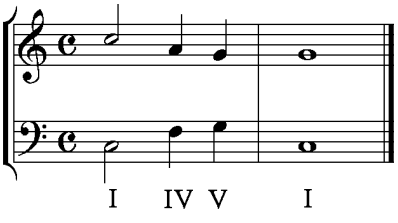
If we play the above triads one after the other, we hear that the minor triads sound somewhat sad and dark in comparison with the cheerful, clear sound of the major triads. While the major triads on I, IV and V form the anchors of tonal harmony, as the cadence formulas demonstrate, the minor triads on II, III and VI provide us with the means to create colour and contrast in our chord progressions.

In the following examples, the cadence formulas are extended by introducing II, III and VI:

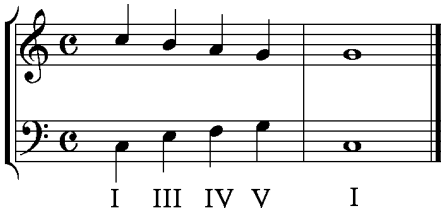


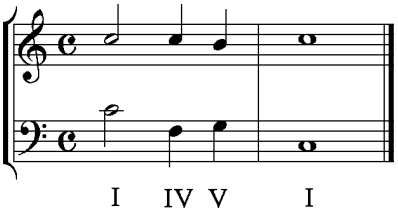
can become:



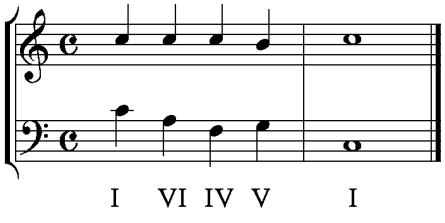


can become:



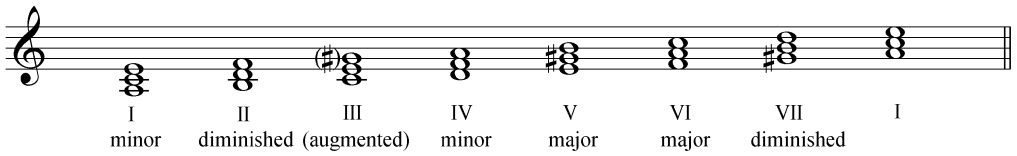


can become:



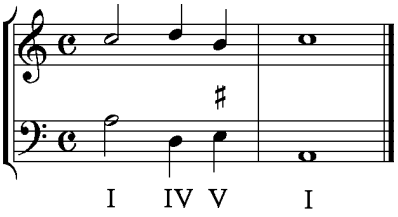
Note the contrasting colour of the minor triads.

If we play a triad on each degree of the scale of A minor, using only the notes of the harmonic minor scale, we hear the following chords:

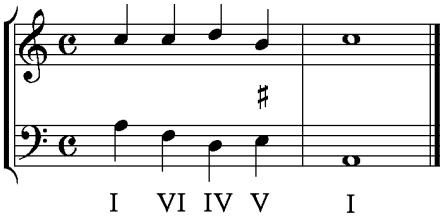


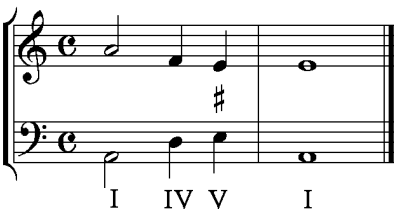
The triad on III is made up of two major 3rds, giving rise to an augmented 5th between the outer parts. This **augmented triad** is colourful but tense, and it is usually avoided by replacing G sharp by G (as in the descending melodic minor scale) to produce a major triad. Thus, in the minor key, major triads occur on III, V en VI.
Note that, precisely in the minor key, the degrees III and VI do not produce additional minor triads.
The diminished triad on II is often avoided by replacing F by F sharp (as in the ascending melodic minor scale).

In the minor key, the major triads on III and VI help us to extend the cadence formulas:

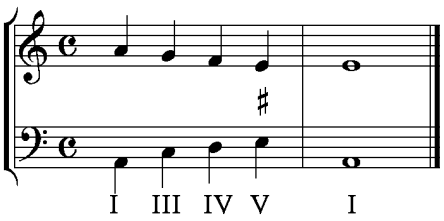


can become:

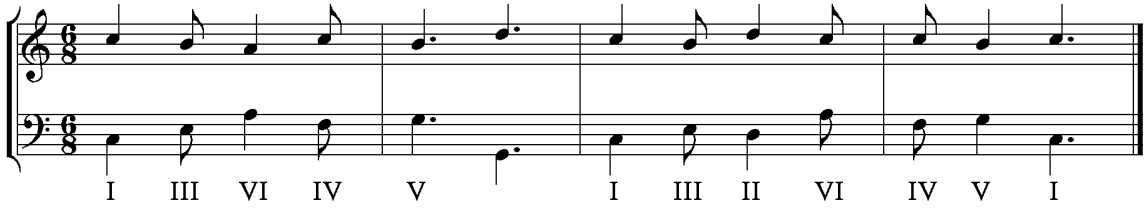


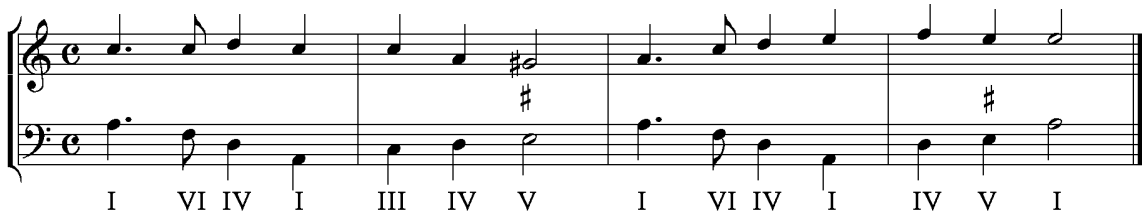


can become:



In both major and minor keys, the triads on II, III and VI enable us to extend our relatively short cadence formulas, and indeed we now have the means to create more extended phrases:





The minor triad adds a new colour to our progressions, enabling us to sustain longer phrases.

The skill of harmonisation involves not only the observation of certain rules in order to create ‘healthy’ progressions, but also the employment of different types of triads on different degrees of the scale in order to create tension and relaxation.

In the major key, the triads on the following degrees are now at our disposal:

I, II, III, IV, V, VI.

In the minor key, we can now employ:

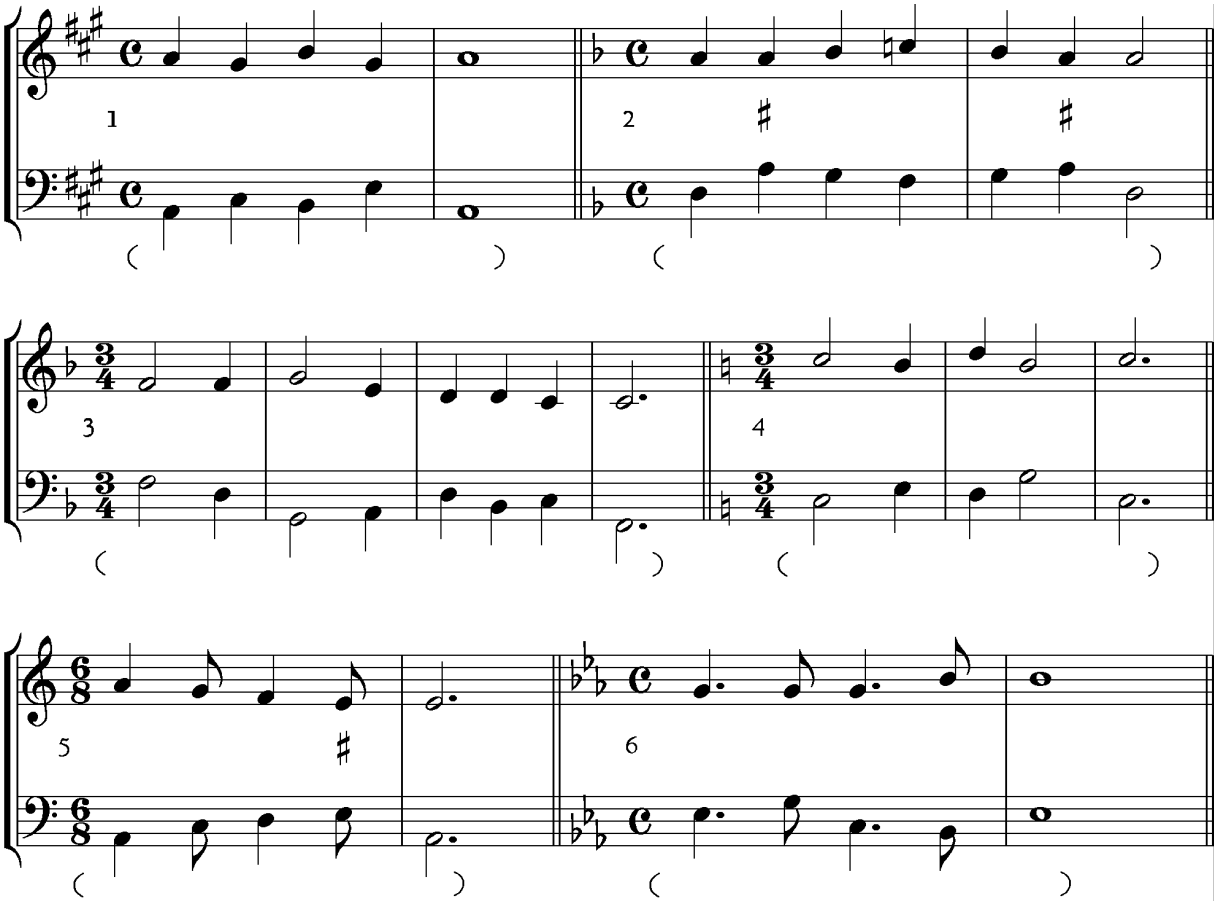
I, III, IV, V, VI.

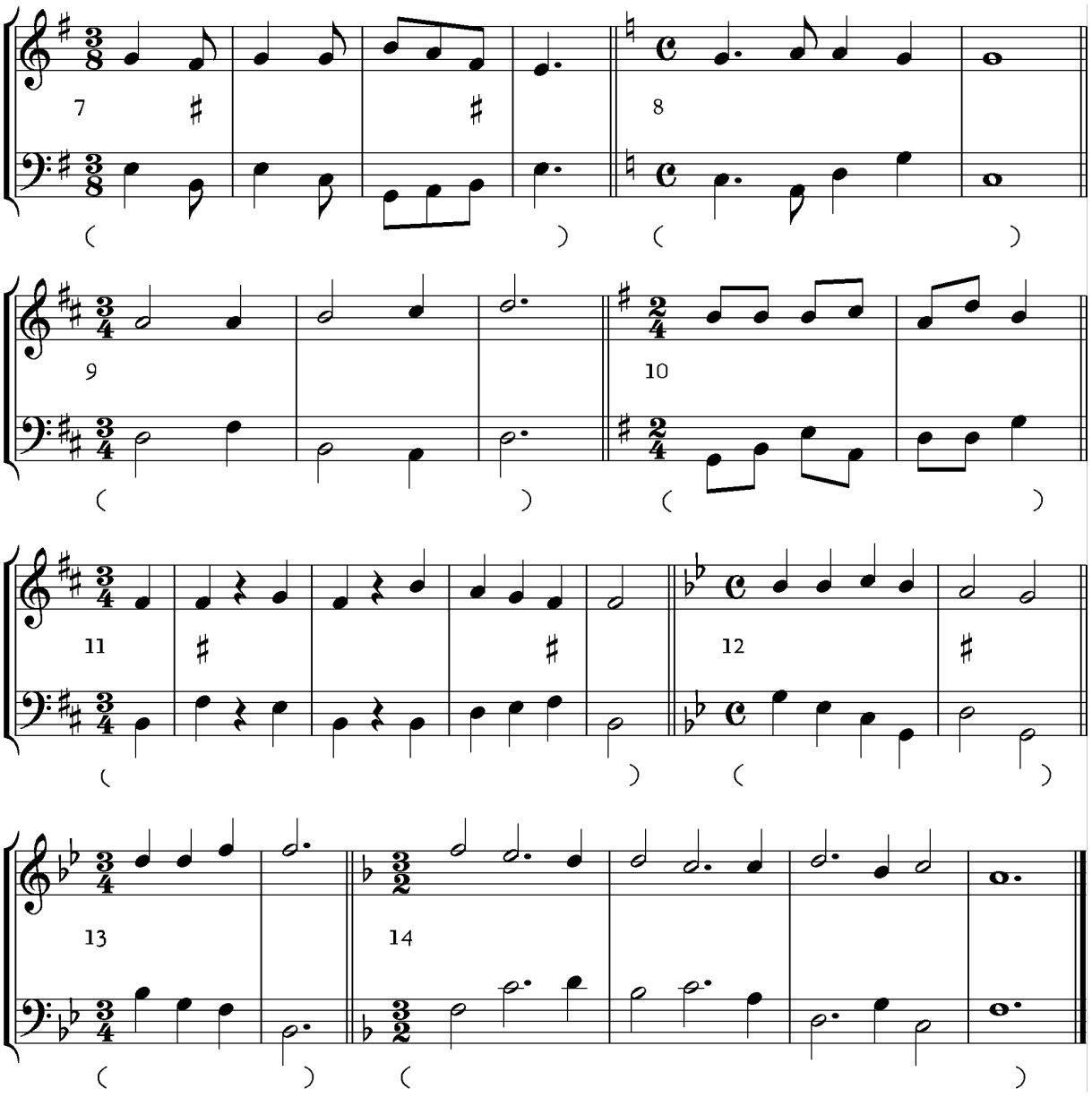
In both major and minor keys, it is advisable to avoid augmented and diminished triads for the time being.

EXERCISES:

1. Play through all the above examples in four parts, and listen to the tension and relaxation of the triads on the different degrees of the scale.

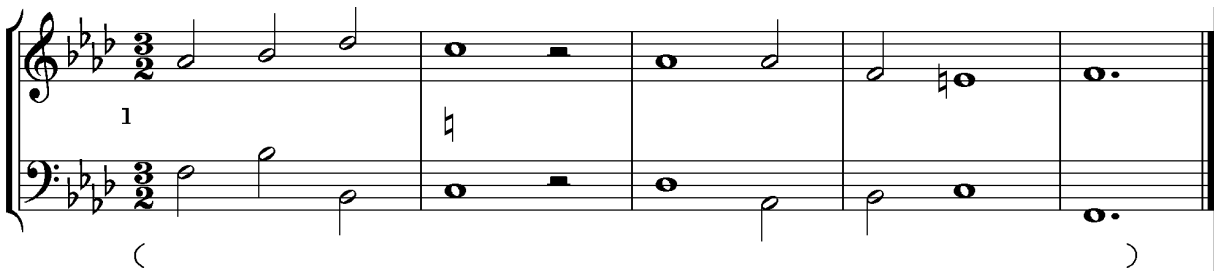
2. Play the following exercises in four parts; write the degrees of the scale between the brackets.

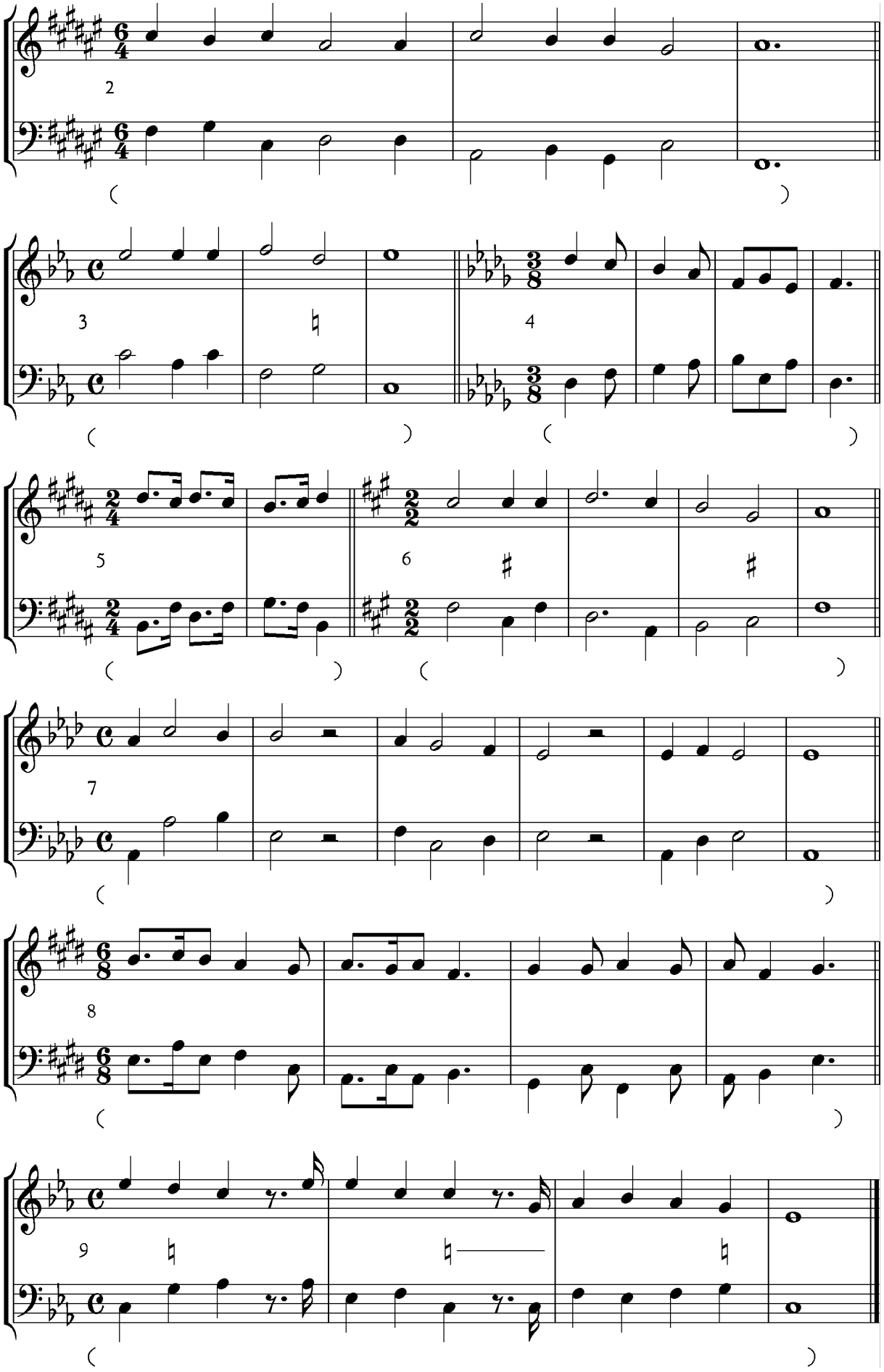




3.* Repeat ex.2 with a solo stop and pedals.

[4.] Play the following exercises in four parts; write the degrees of the scale between the brackets.





[5.*] Repeat ex.4 with a solo stop and pedals.

18

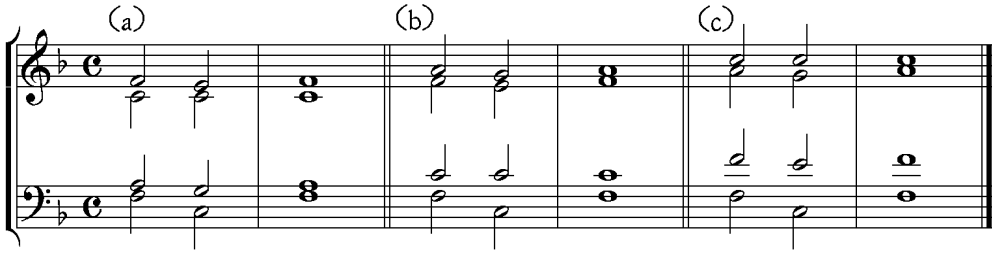
WRITING A BASS (iv)

Parallel 8ves and 5ths
Exercises with a given soprano

In writing a bass, we now have twice as many possibilities at our disposal: the triads on I, IV and V, and, in addition, the triads on II (in the major key), III and VI. Final cadences are standard progressions with their own fixed degrees. For the rest, a given soprano usually presents a number of options. A good harmonic progression is one that complies with certain rules; but it is also one that pleases our ear, and not all theoretically correct progressions sound equally satisfactory. This is why it is so important to develop our ear by playing good examples and listening carefully to the progressions.

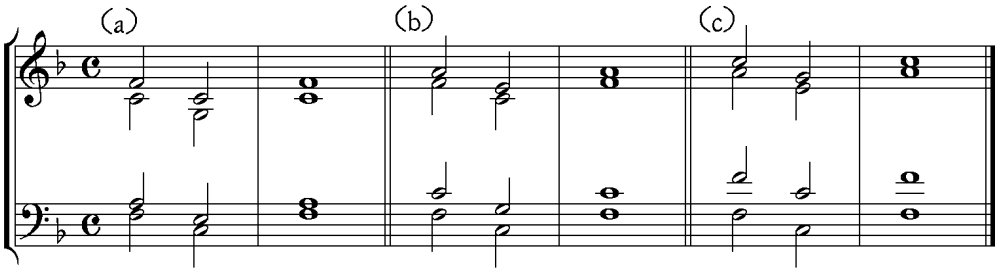
Let us examine the rules to which our progressions must comply.

In ch.6, three harmonisations of the I-V-I progression were given:



(a) alternates the 8-position on I with the 3-position on V.
(b) alternates the 3-position on I with the 5-position on V.
(c) alternates the 5-position on I with the 8-position on V.

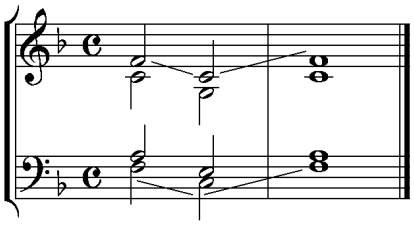
If we neglect this alternation of 8-, 3- and 5-positions, the I-V-I progression could look like this:



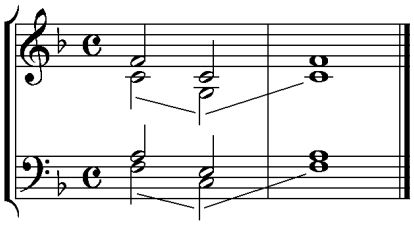
(a) has three consecutive 8-positions, (b) has three 3-positions, and (c) three 5-positions.

Play these progressions and compare them with the previous ones. The cadences in the second example sound considerably weaker than those in the first example.

If we examine cadence (a) in the second example more closely, we see that the soprano and bass move in **parallel 8ves**:

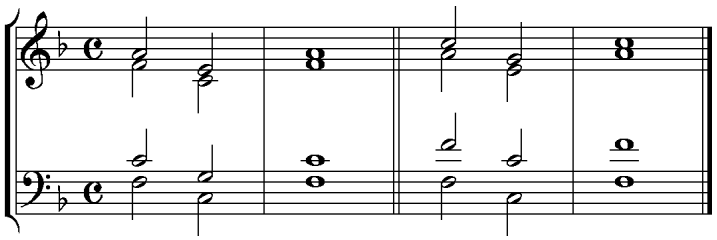


and that the alto and bass move in **parallel 5ths**:



EXERCISE:

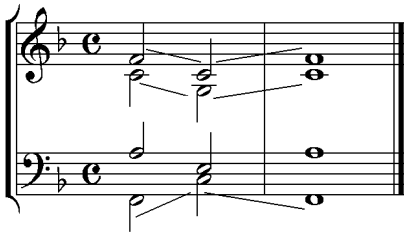
Indicate the parallel 8ves and 5ths in the other two cadences:



Strong progressions are of the utmost importance. They are the very joints of music, and they require sound carpentry in order to create sturdy structures. For this reason, the following parallel motion is forbidden:

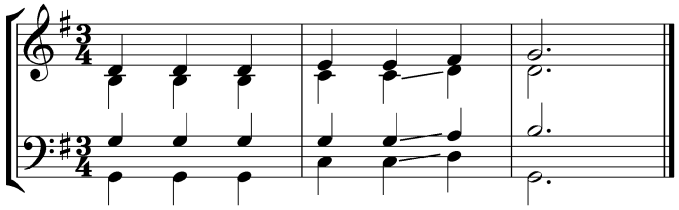
- two consecutive 8ves between the same two voices;
- two consecutive perfect 5ths between the same two voices.

In the following example, this parallel motion seems to be avoided by playing a low F in the bass:

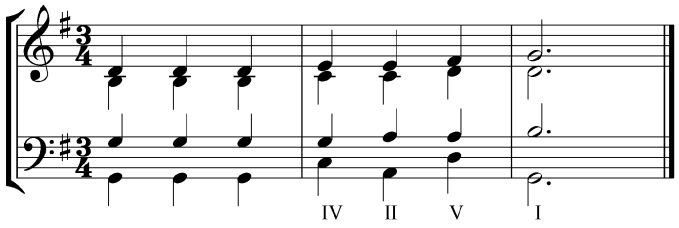


But the cadence hardly sounds any stronger. This progression too, with its parallel 8ves (between the soprano and bass) and parallel perfect 5ths (between the alto and bass) in contrary motion must also be avoided.

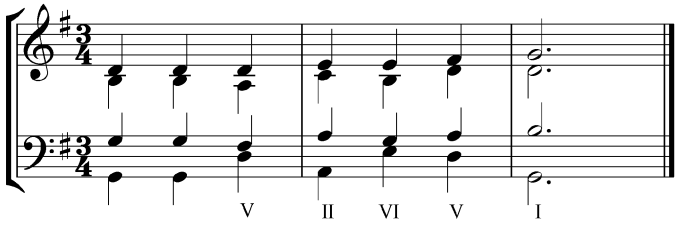
Repeated perfect 5ths and 8ves do not need to be avoided. The first bar of the following example is perfectly acceptable, since the same 5-position is simply repeated:



It is only in bar 2 that the progression sounds weak, when the 3-position on IV is followed by the 3-position on V. The parallel 3rds between the soprano and bass are not incorrect in themselves, but we are not yet sufficiently skilled to accommodate this parallel 3rd without causing incorrect parallel 5ths and 8ves. Assuming that the soprano is given, our only option for the time being is to change the bass:



Or, for instance:



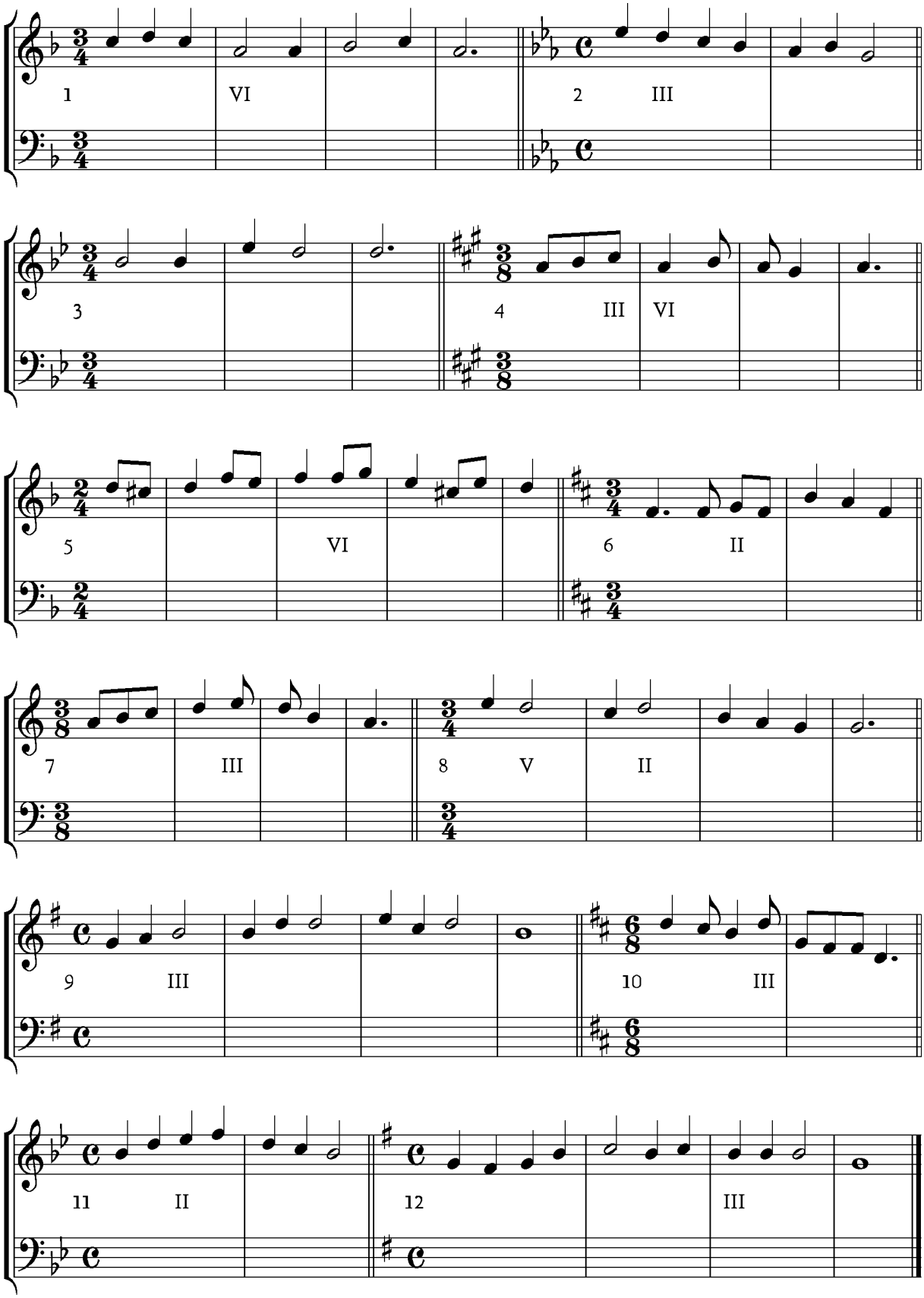
Consecutive 5- and 8-positions are incorrect, since they imply parallel 8ves and 5ths.
Consecutive 3-positions must be avoided at this stage, since they cause parallel 8ves and 5ths.

Before these rules dampen our enthusiasm for harmonisation, there is comfort at hand. If we observe the following guidelines, the exercises in this volume can be played without incorrect parallel motion:

- Use only the 3-, 5- and 8-positions of triads, with the root in the bass.
- Do not juxtapose the same position of two different chords.
- Play in closed spacing.

EXERCISES:

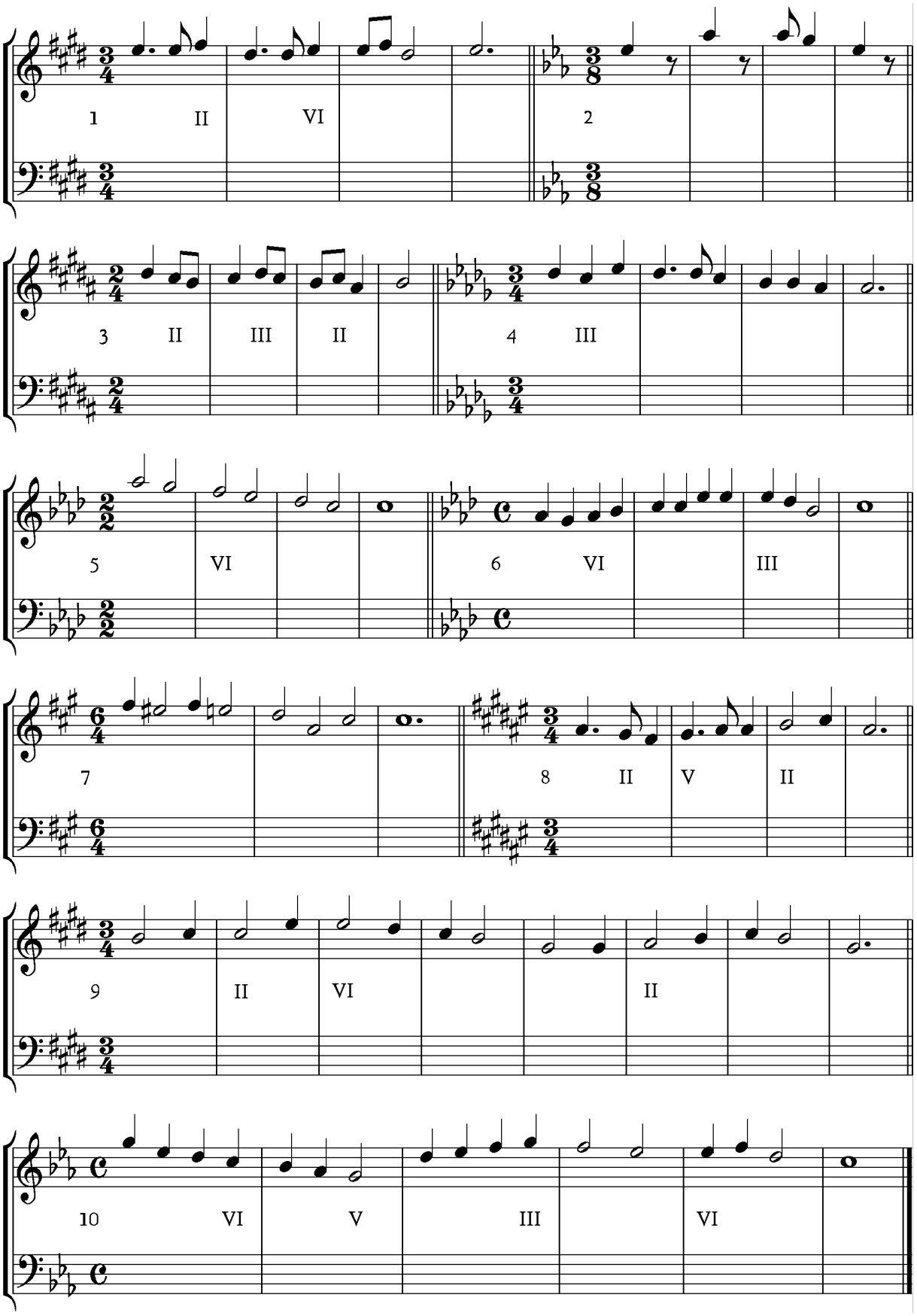
1. Write a bass to the following soprano parts. First determine the key and fill in the final cadence. Create contrast by using III and VI, and also II in the major key. In order to stimulate this, some degrees are already indicated. Always check the bass in order to avoid successive chords in the same position.



2. Play ex.1 in four parts.

3.* Repeat ex.1 with a solo stop and pedals.

[4.] Write a bass to the following soprano parts. Check the two voices and play the exercises in four parts.



[5.*] Repeat ex.4 with a solo stop and pedals.

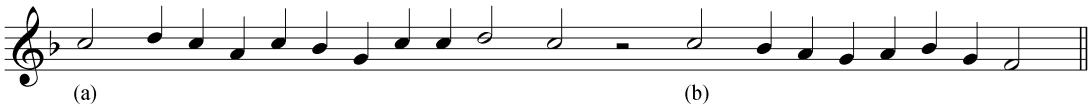
19

PHRASE STRUCTURE AND MODULATION

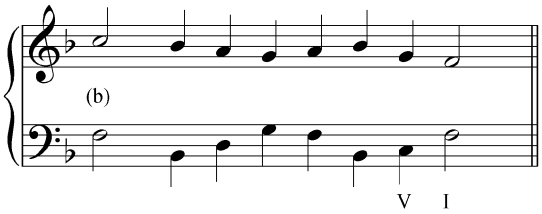
Perfect and imperfect cadences
Elementary modulations

The degrees and triads now at our disposal enable us to harmonise a wide range of tunes. The exercises in previous chapters were relatively short; as the given melodies become longer, we need to look more closely at their phrase structure and tonality. Although the structure of a given upper part largely determines the course of the bass, there are choices enough to be made by the player.

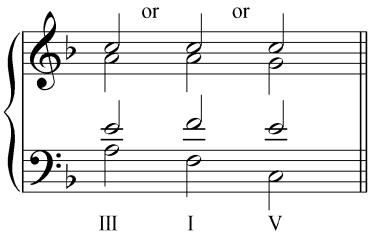
The beautiful Flemish melody *'k Hef, vol verlangst, van dag tot dag mijn ogen* (published in Antwerp in 1579), begins as follows:



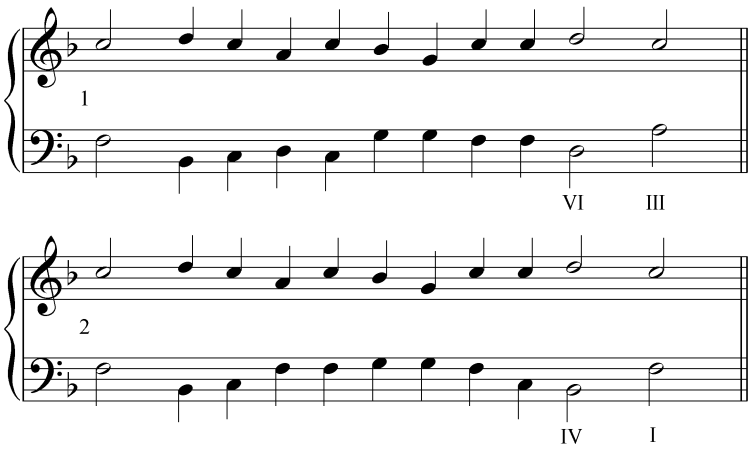
Although the two phrases are different, they complement one another and form a simple two-part or **binary** structure. The second phrase (b) invites us to close with the V-I cadence in the original key of F major:

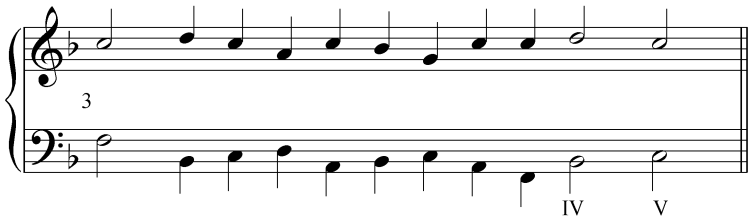


The cadence at the end of the first phrase (a) is less self-evident. The final note C could be the 3-, 5- or 8-position of three different degrees:



and all three chords could be reached as follows:

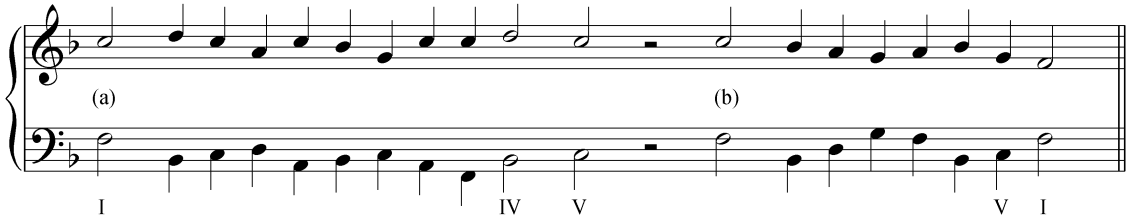




EXERCISE:

Play the three harmonisations of (a) in four parts, followed each time by the given harmonisation of (b).

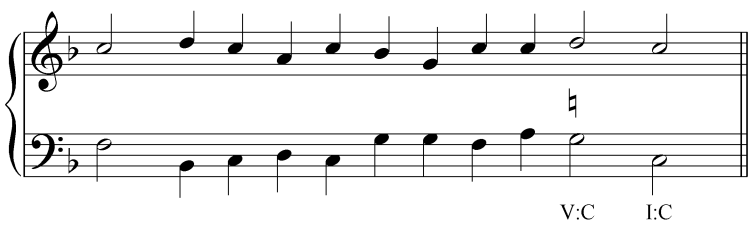
Let us examine more closely the third option for (a), in the context of the two phrases as a whole:



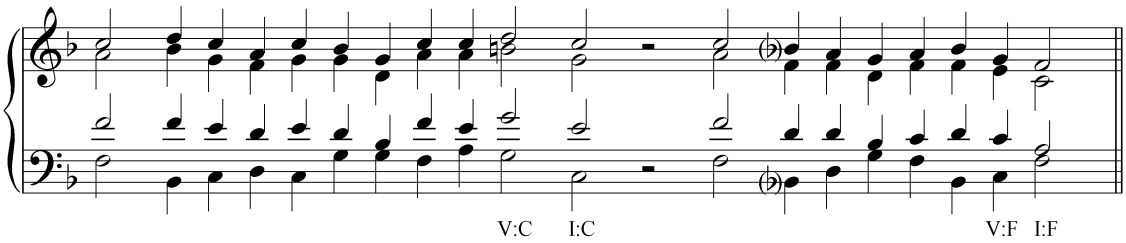
The key is F major; (a) ends with an imperfect cadence on the dominant, and (b) ends with a perfect cadence on the tonic (see p.20). When a phrase ends on the dominant, it ends in the air, as it were, for we sense that the music has been interrupted and must continue. In ch.6, the I-V-I progression was compared with throwing a ball, with a moment of tension - or instability - between moments of stability. The above binary form, poising as it does midway on the dominant, creates exactly the same effect over a longer period of time.

Essential to this effect is the alternation of the cadences. If we reconsider the three harmonisations of (a) in relation to the given setting of (b), it is clear that the second option, though not incorrect, is somewhat plain: both (a) and (b) begin and end on I. More interesting is the first option, in which (a) ends on the colourful minor triads VI-III, and the third, with the imperfect cadence at the end of (a), for the reason given above.

A stronger contrast can be achieved by **modulating**, or changing key. The imperfect cadence in the third option ends with the triad of C. This is not to be confused with the key of C major, for the C triad here is degree V in the key of F major. The phrase ends on the dominant, but not in the dominant (key). However, the melody would indeed allow us to make a **modulation** to the key of C major. By replacing B flat by the new leading note B natural, we take a single step around the circle of 5ths from the key of F major to that of C. The function of the leading note B, leading the music to the new tonic C, is unambiguous:

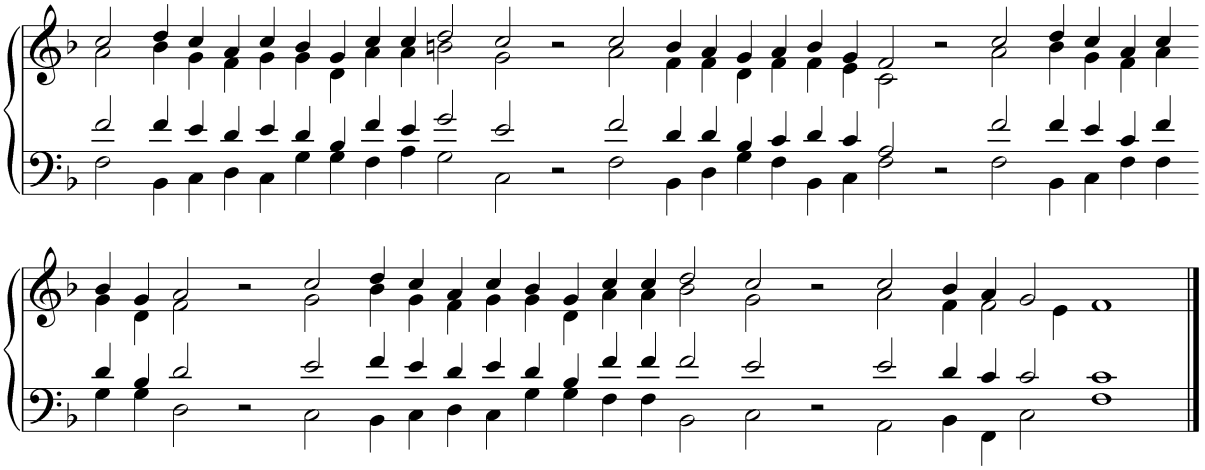


Subsequently, the modulation is made undone in (b), where the note B yields to B flat. In this particular case, the given soprano presents us with little other choice, since B flat sounds almost directly in the melody. The key scheme of this fourth option is therefore F - C - F:



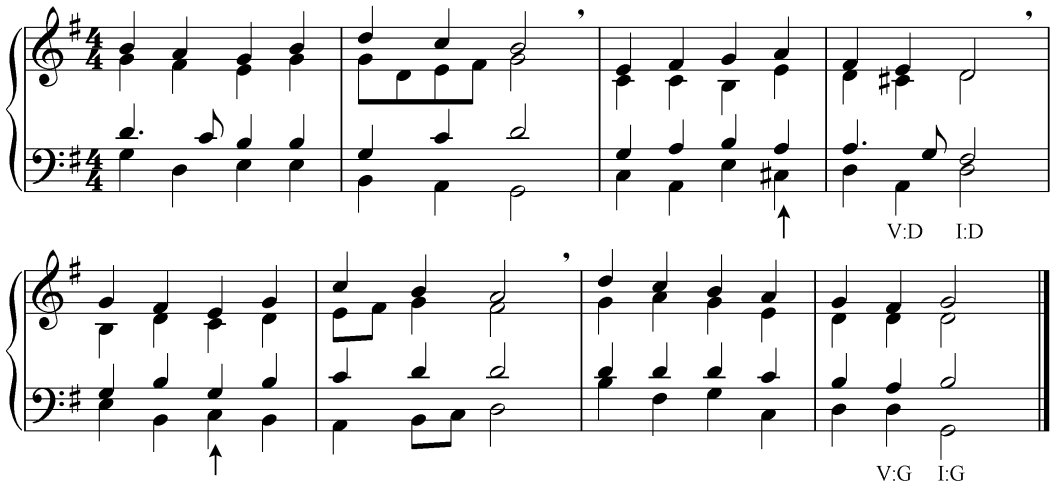
The V-I cadence in the key of C major is a stabilising factor, through which we sense that the harmonisation 'arrives' on the tonic C. Previously, the imperfect cadence on the dominant C - in the key of F major - suggested that the 'ball' was still in the air. Now it has come to rest, if only temporarily, on a new tonic.
Elementary modulation involves not arbitrary but closely related keys, for example from C to G, C to F, E minor to G or C to A minor. The circle of 5ths remains our point of reference.

For the sake of completeness, here is the entire tune with my own harmonisation:

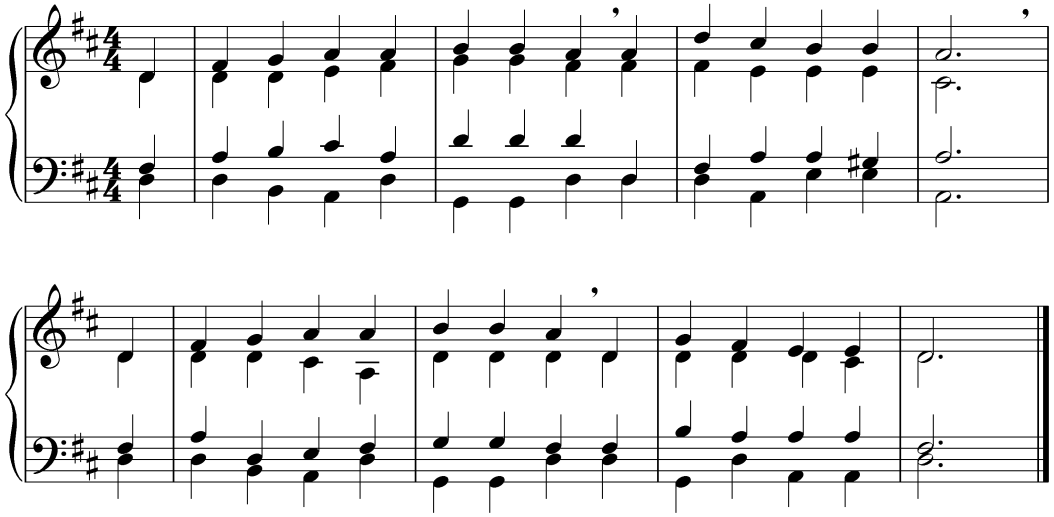


EXERCISES:

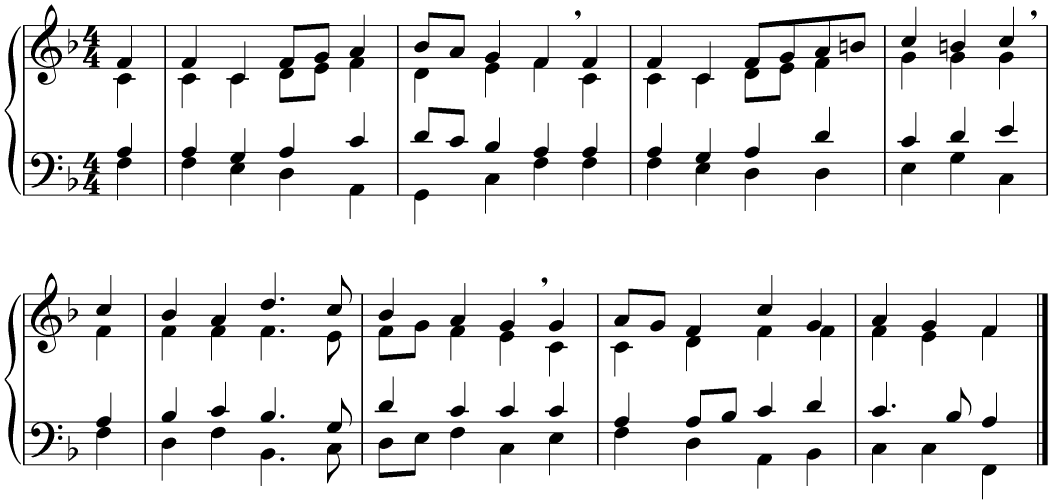
1. Each of the following hymn tune harmonisations features a single modulation, confirmed by a V-I cadence in the new key (add the degrees). In some cases, the modulation is announced by the new leading note prior to this cadence (add an arrow). Try to hear where the harmonisation subsequently turns back towards the original key (add an arrow). The original key is confirmed in the final cadence (add the degrees). *Vienna* by Justin Heinrich Knecht (1752-1817) provides an example:



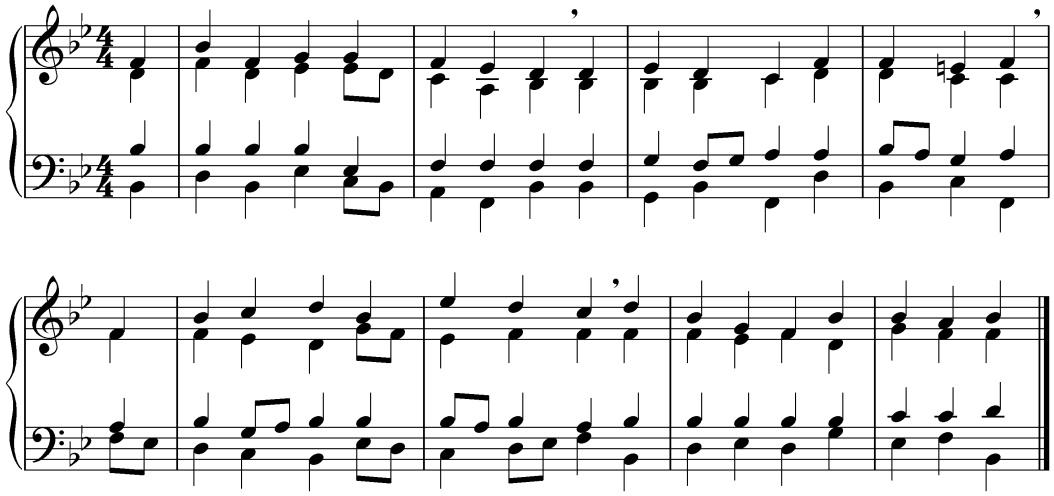
(a) *Tallis's Ordinal* (Thomas Tallis, ca.1505-1585)



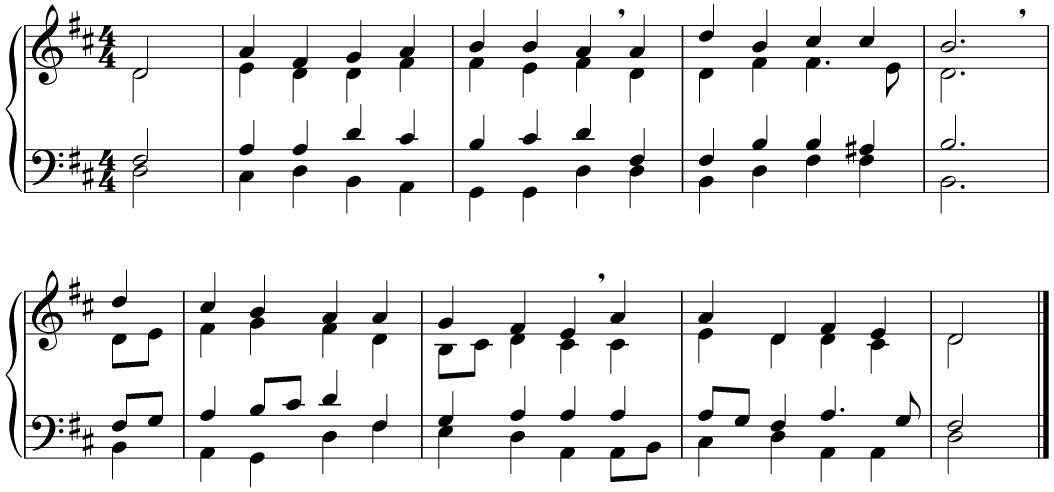
(b) *Illsley* (John Bishop, ca.1665-1737)



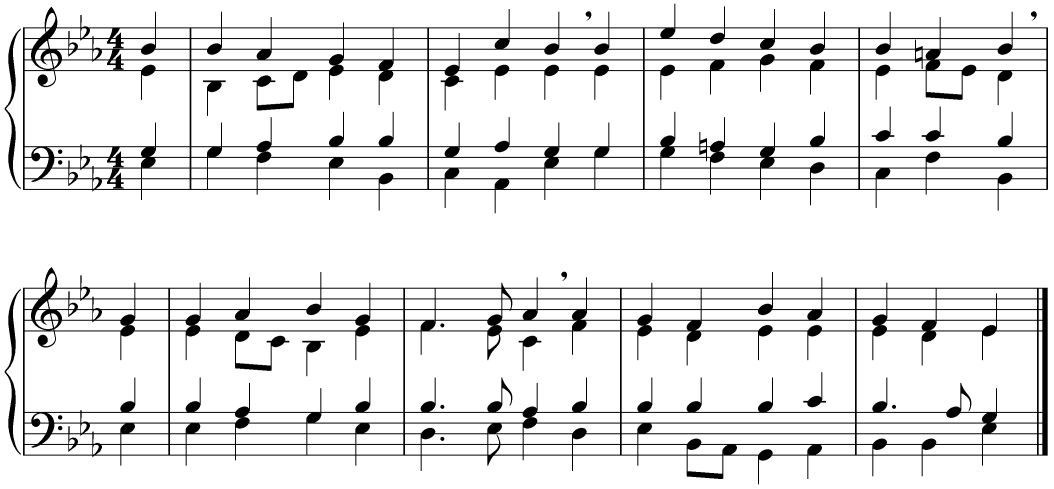
(c) *Winchester New* (after *Musicalisches Hand-Buch*, Hamburg 1690)



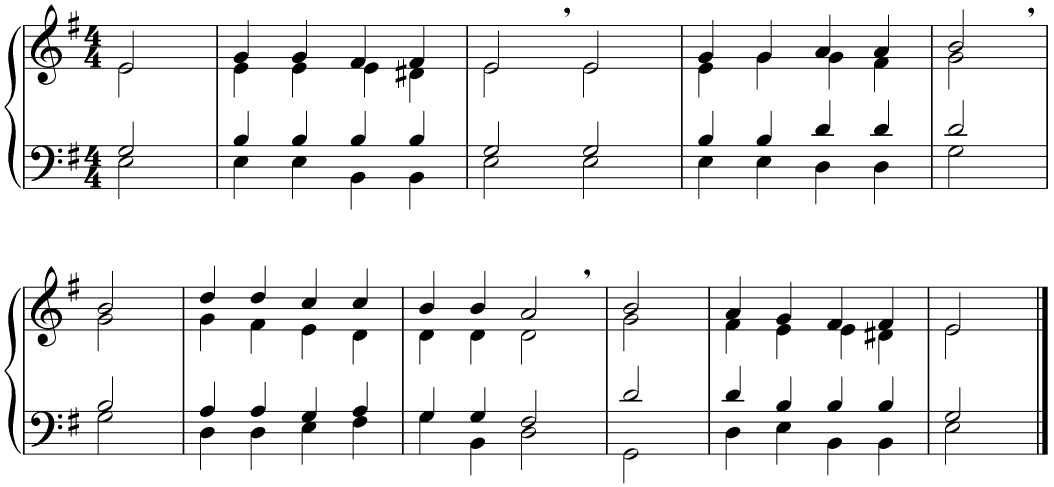
(d) *Song 67* (melody and bass by Orlando Gibbons, 1583-1625, setting published 1621)



(e) *Melcombe* (Samuel Webbe the elder, 1740-1816)



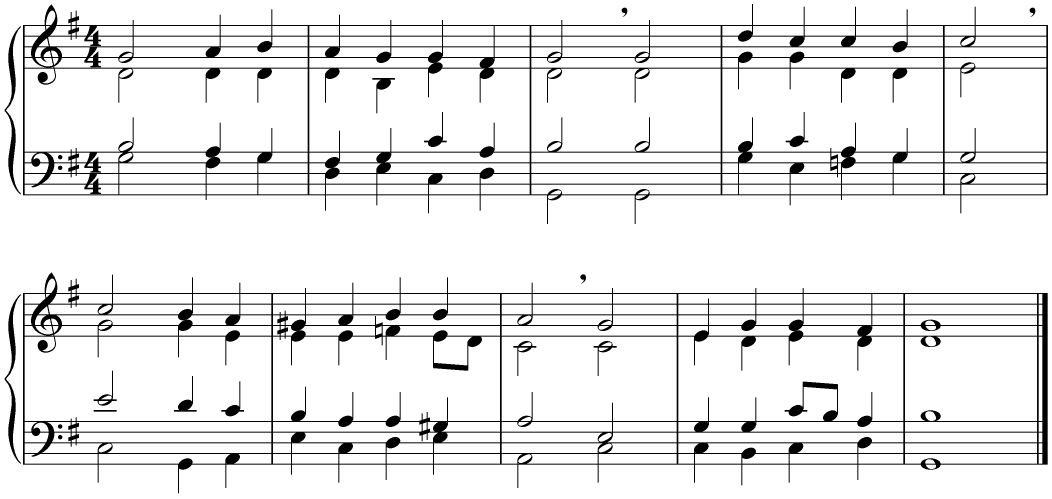
(f) *Southwell* (after William Daman, ca.1540-1591)



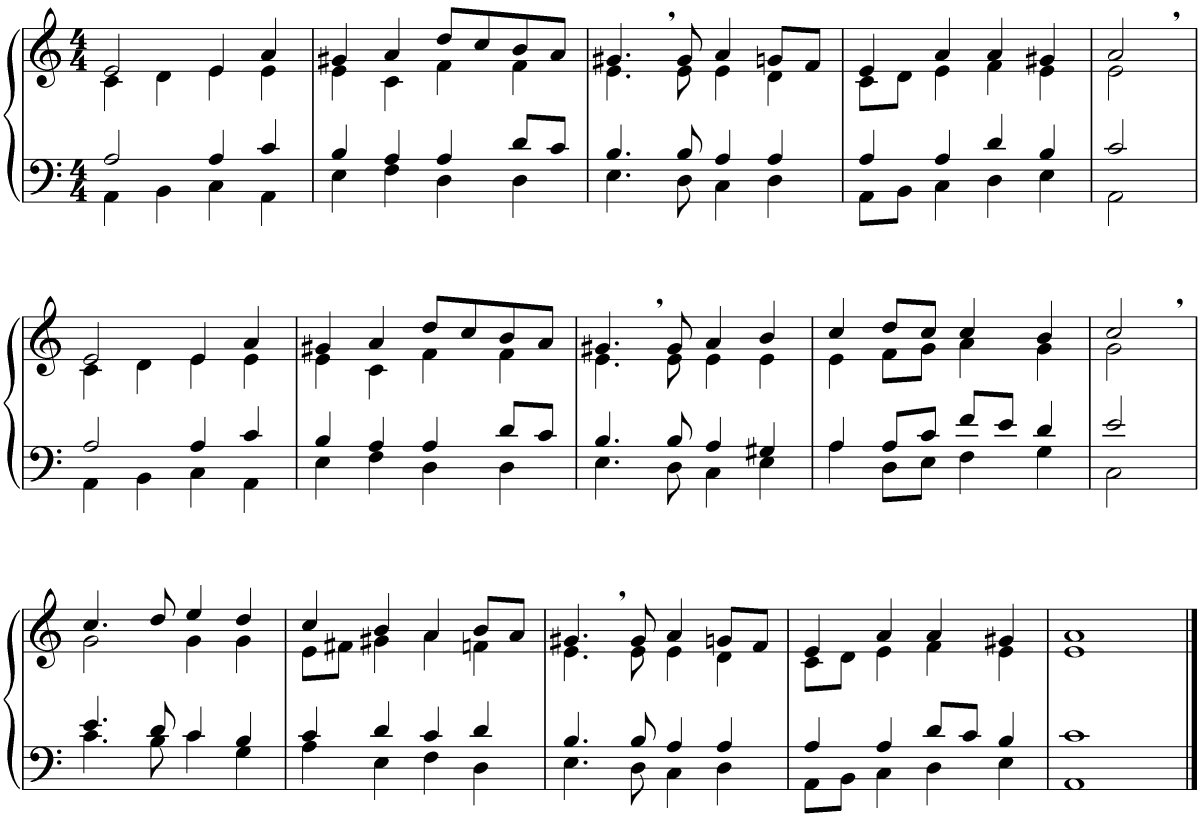
2. Play the above hymn settings. Pay attention to the bass line and listen to the manner in which the music changes direction at the modulations.

3. The following harmonisations feature more than one modulation, each marked by the V-I cadence on the new tonic. Write down the degrees of the cadence in the new key, indicate where the key begins to change, and play the settings.

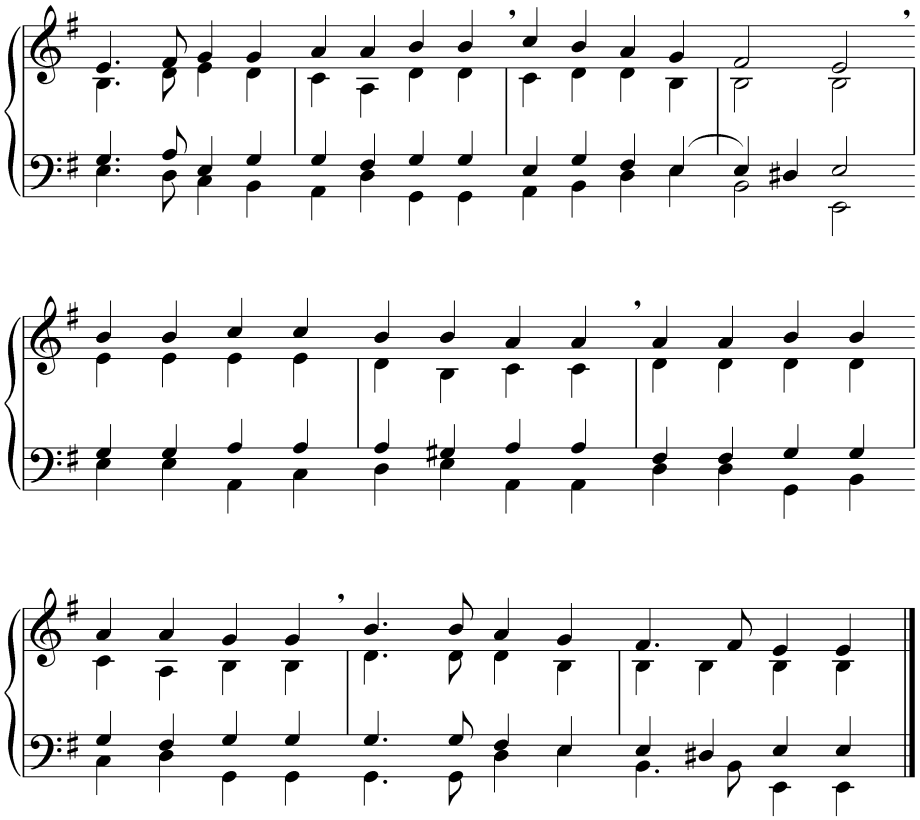
(a) *Lincoln* (Thomas Ravenscroft's Psalter, 1621)



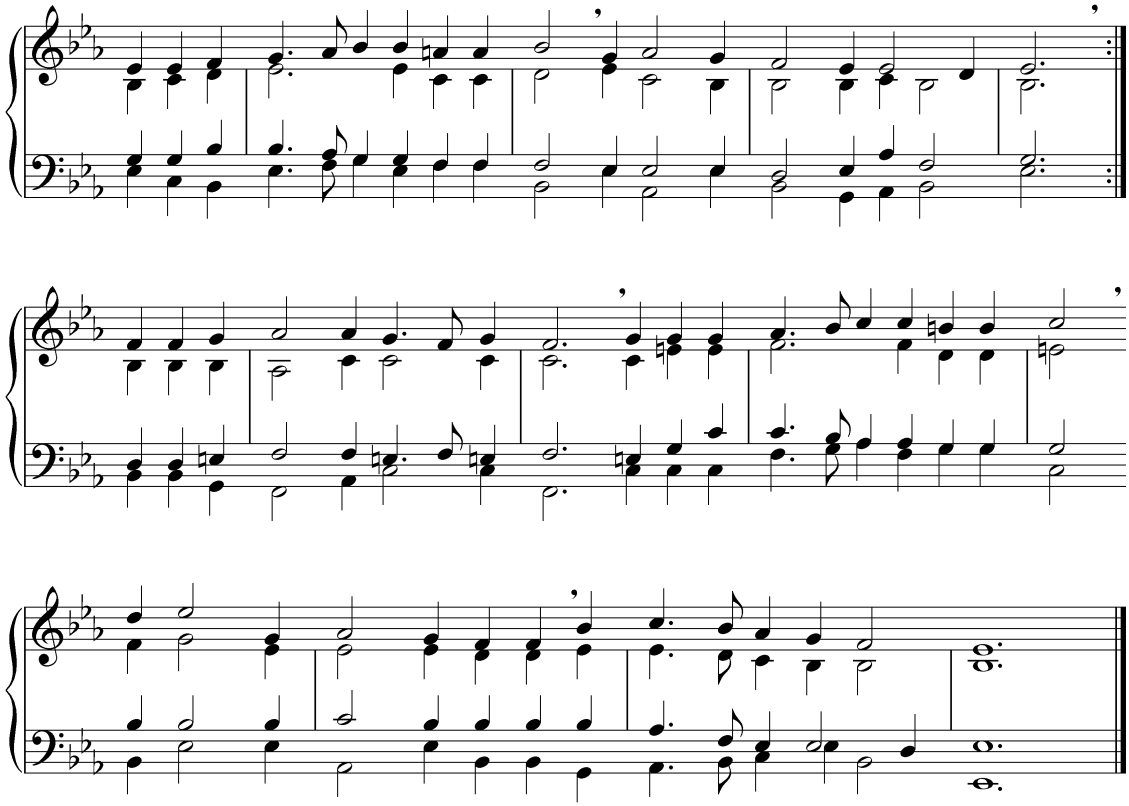
(b) *O lead my blindness* (John Bishop, 1700, setting Adriaan Engels, 1906-2003)



(c) *Ach wie flüchtig, ach wie nichtig* (Michael Franck 1652 / Johann Crüger 1661)



(d) *O Grote God die liefde zijt* (after Johann Schop, 1641; setting after Gottfried Vopelius)

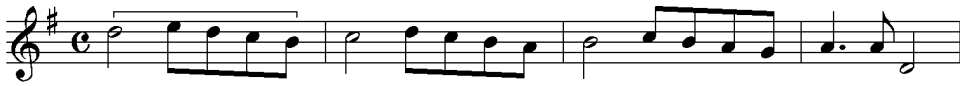


20

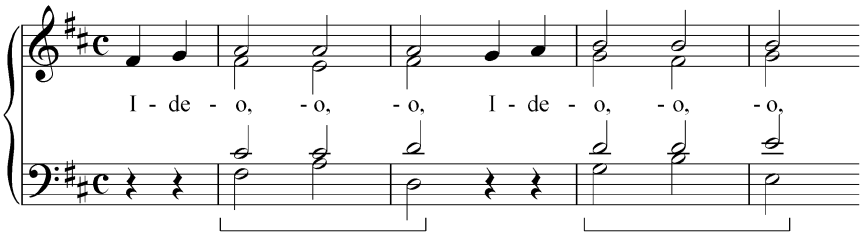
REVISION EXERCISES

Sequential exercises
Hymn tunes to be harmonised

The first revision exercises take the form of **sequences**. In a sequence, a motif is consistently repeated at equidistant pitches. An example is the *Gloria in excelsis Deo* refrain in *Angels from the realms of glory*:



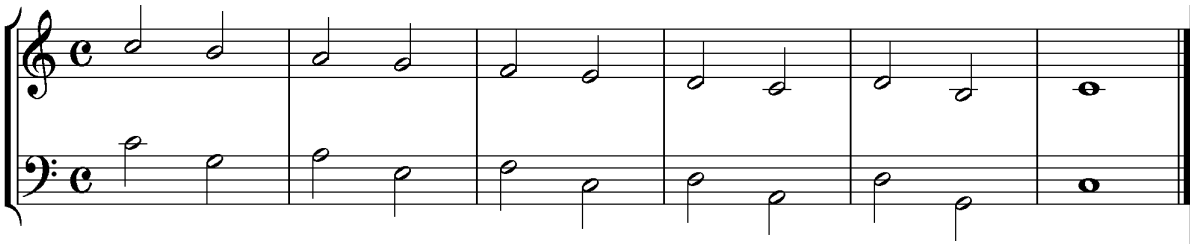
Another Christmas example is the refrain of *Personent hodie*, in which, as is customary in a sequence, the harmonic progression is also consistently repeated:



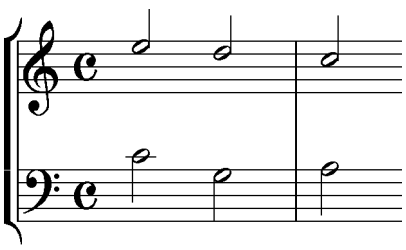
With their literal repeats at different pitches, sequences are useful material for practising harmonic progressions.

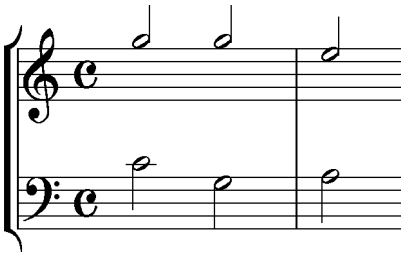
EXERCISES:

1. Play the following sequence in four parts. Pay particular attention to the course of the bass.



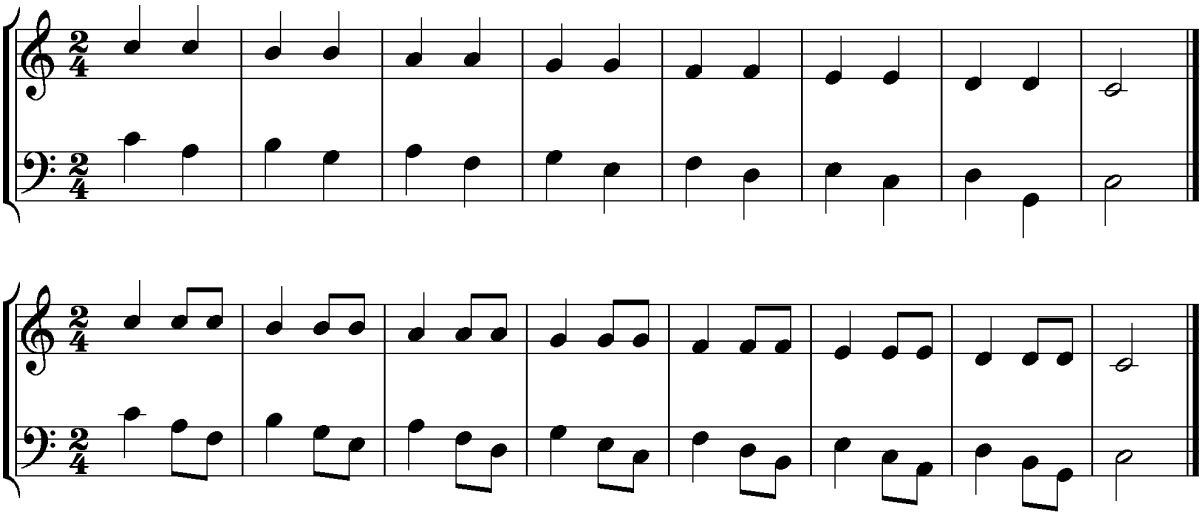
This sequence begins with an 8-position. Play the same sequence beginning with the 3-position, and then with the 5-position:



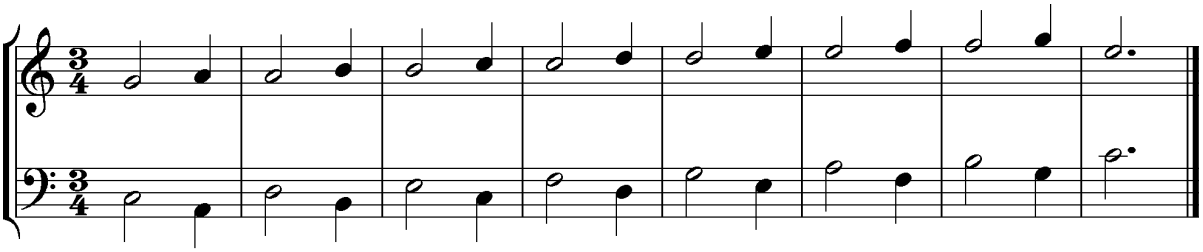


2. Practise these three sequences in as many keys as possible, moving around the circle of 5ths. Close the book and play by memory. This helps to improve our ear: we only need to memorise the first bar and the cadence, since the other bars are the same as the first!

3. Play the following sequences in the same manner - in three positions, and transposed to other keys. The attentive player will hear occasional diminished 5ths, caused by the consistent repetition that is so characteristic of sequences.



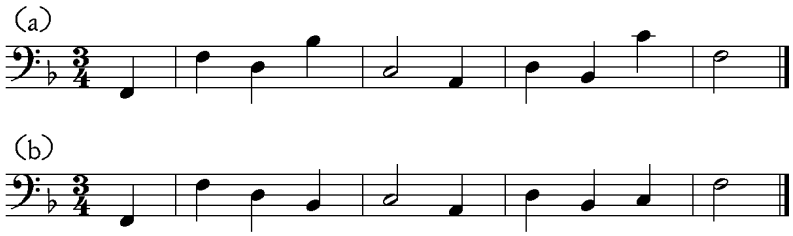
4. Finally, a rising sequence. Here again there are occasional diminished 5ths.



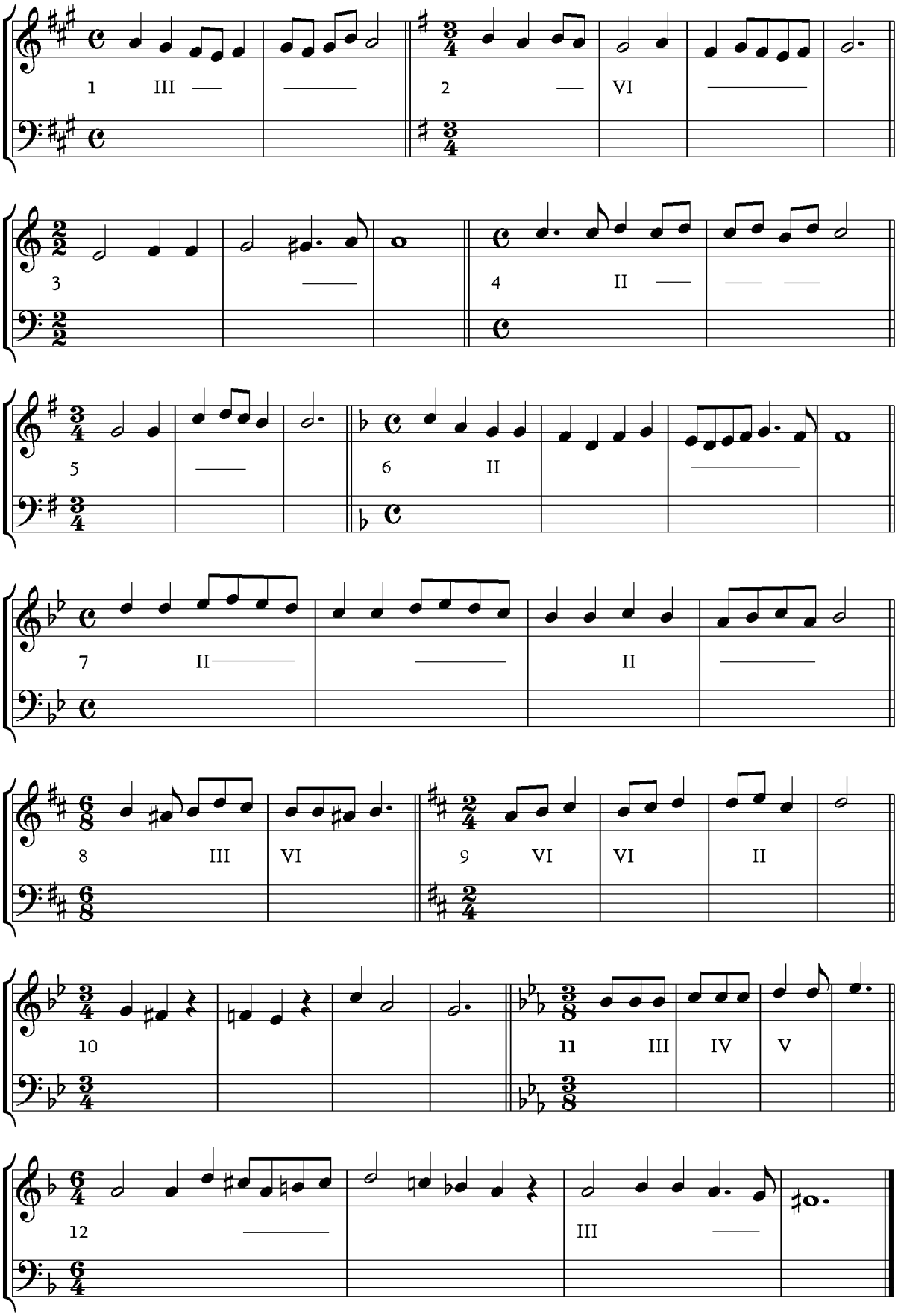
5.* Repeat the exercises with a solo stop and pedals

The following exercises form a continuation of those in ch.18. Only the bass part is to be written down. Before practising in four parts, check the bass to avoid the following:

- undesired parallel 3rds, 5ths and 8ves in relation to the soprano;
- the same parallels in contrary motion (see p.60);
- awkward leaps, which are not conducive to supple part writing. Our bass singers may like a leap of an 8ve, but they are less fond of the 7th and the 9th! Writing (b) instead of (a) will bring a quicker end to any choir practice:

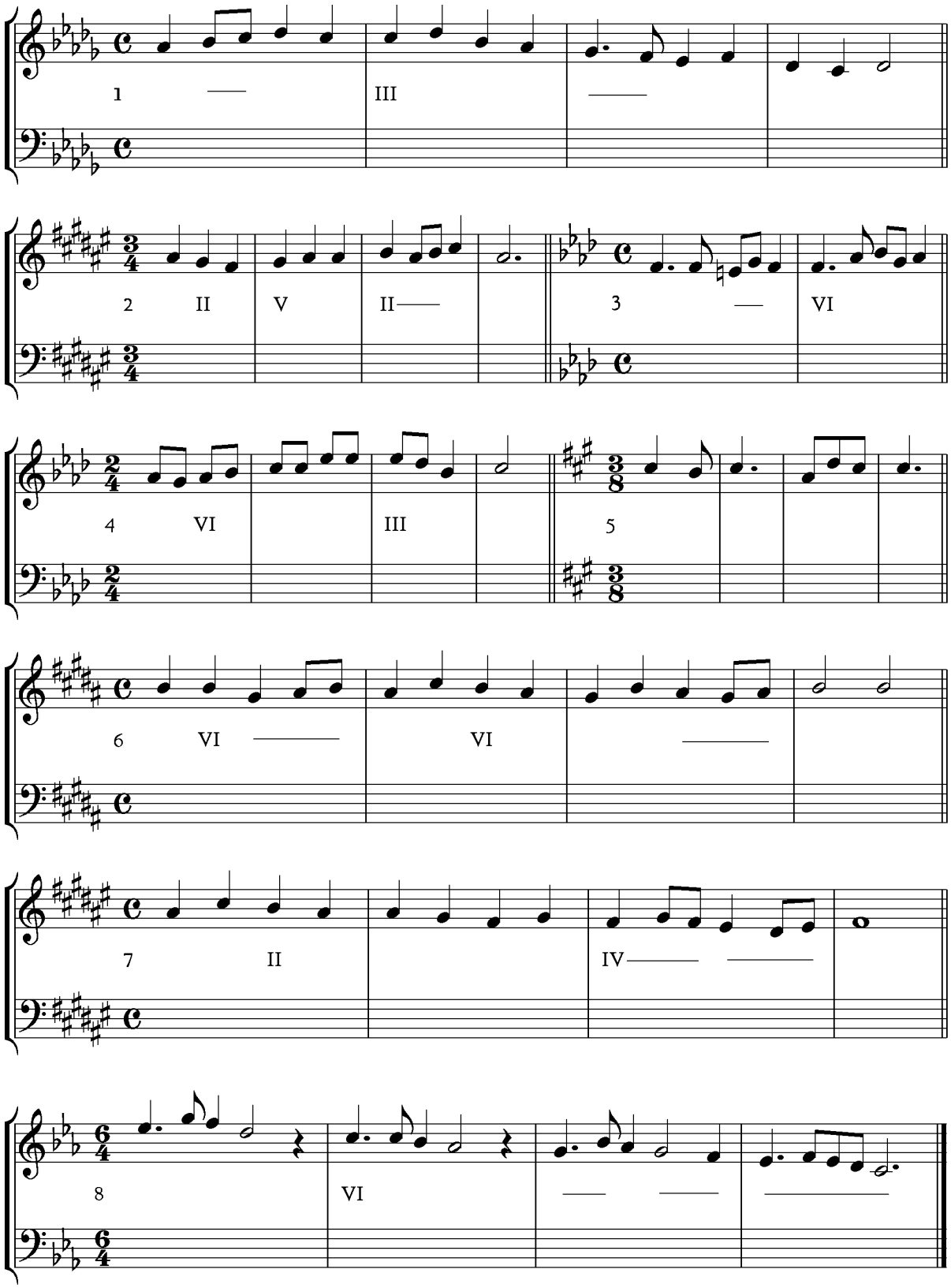


6. Write a bass to the following soprano parts. Check the bass and play the exercises in four parts. As explained in ch.14, a horizontal line means that a chord remains 'in force', though its position may change so that the alto and tenor move along with the soprano.



7.* Repeat ex.6 with a solo stop and pedals.

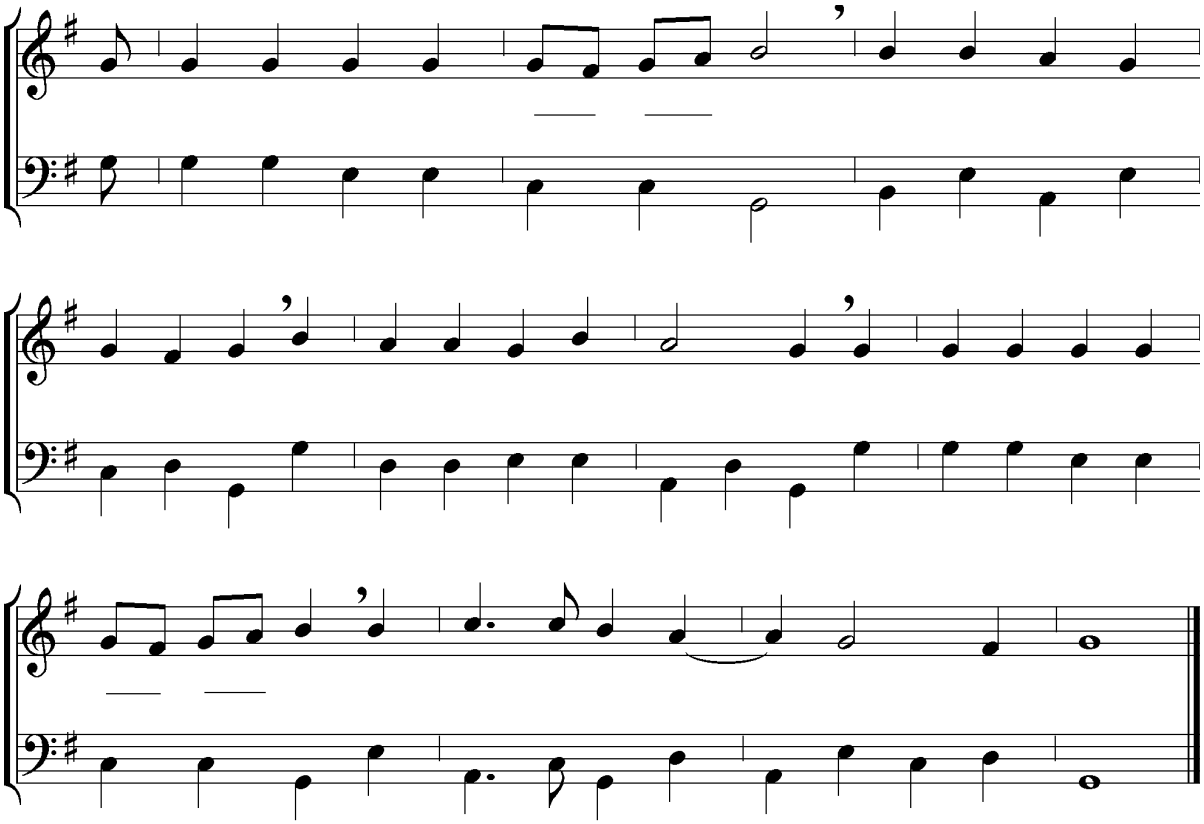
[8.] Write a bass to the following soprano parts and practise in four parts.



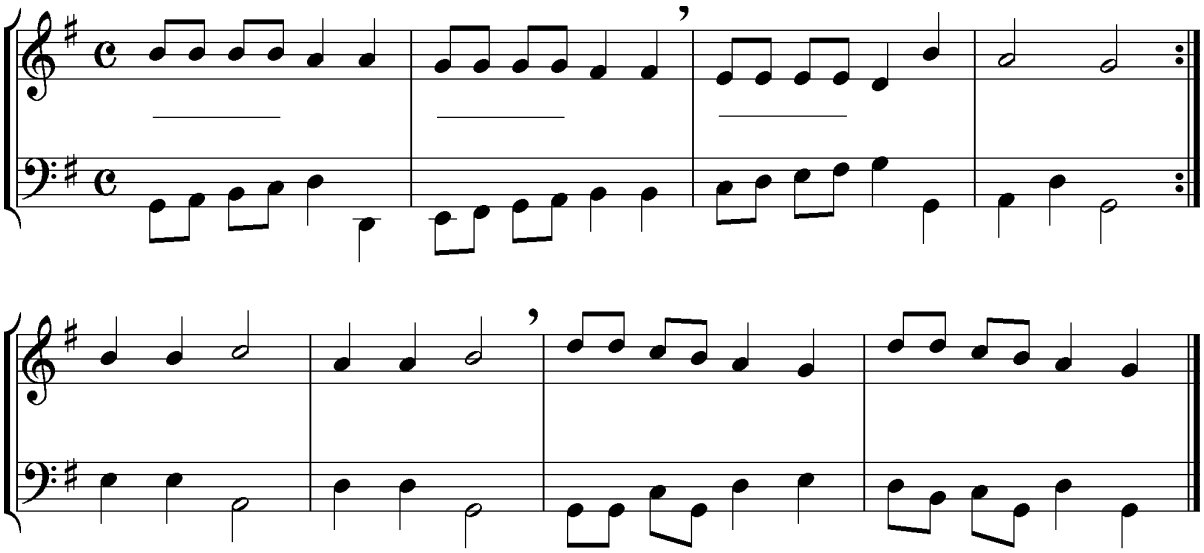
[9.*] Repeat ex.8 with a solo stop and pedals.

10. Play the following hymn settings in four parts.

(a) *Wie was diegene die die loverkens brak* (Antwerp, 1540)



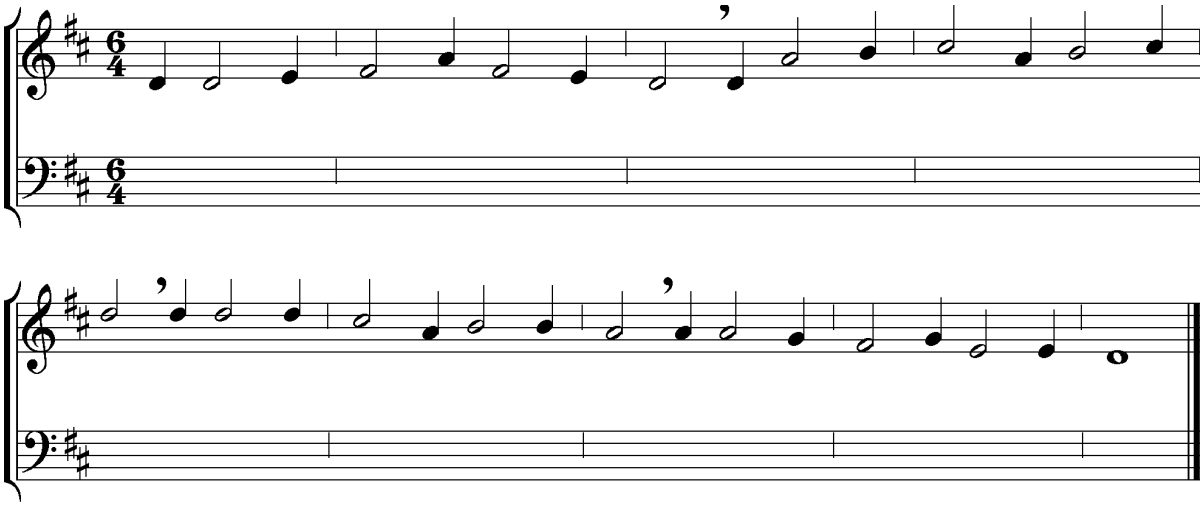
(b) *Wunderbarer König* (Joachim Neander?, 1680)



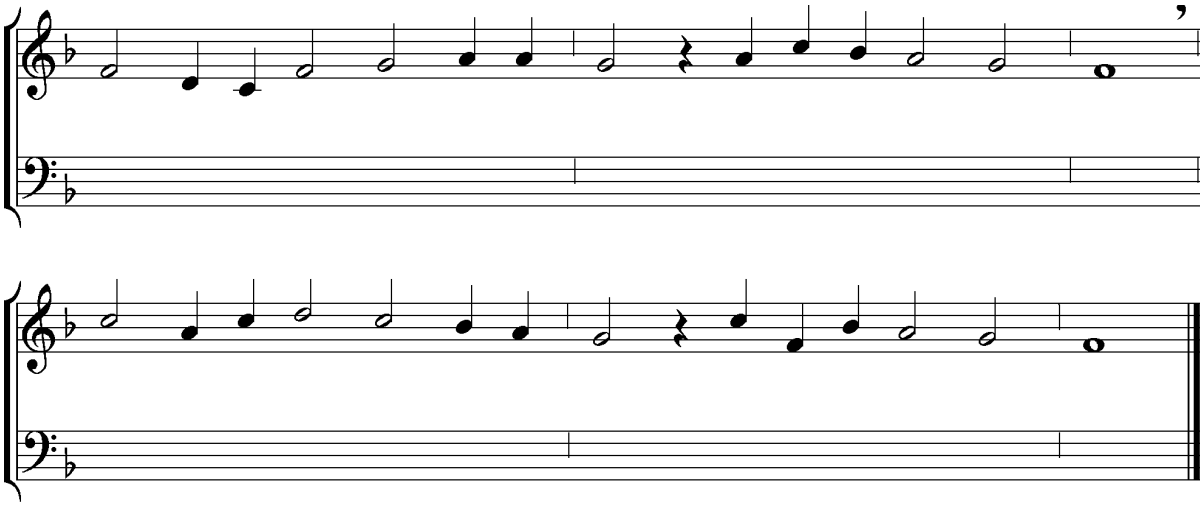
11.* Repeat the above hymns with a solo stop and pedals.

12. Write a bass to the following hymn tunes. These melodies can be harmonised without modulations. Check the bass and practise in four parts.

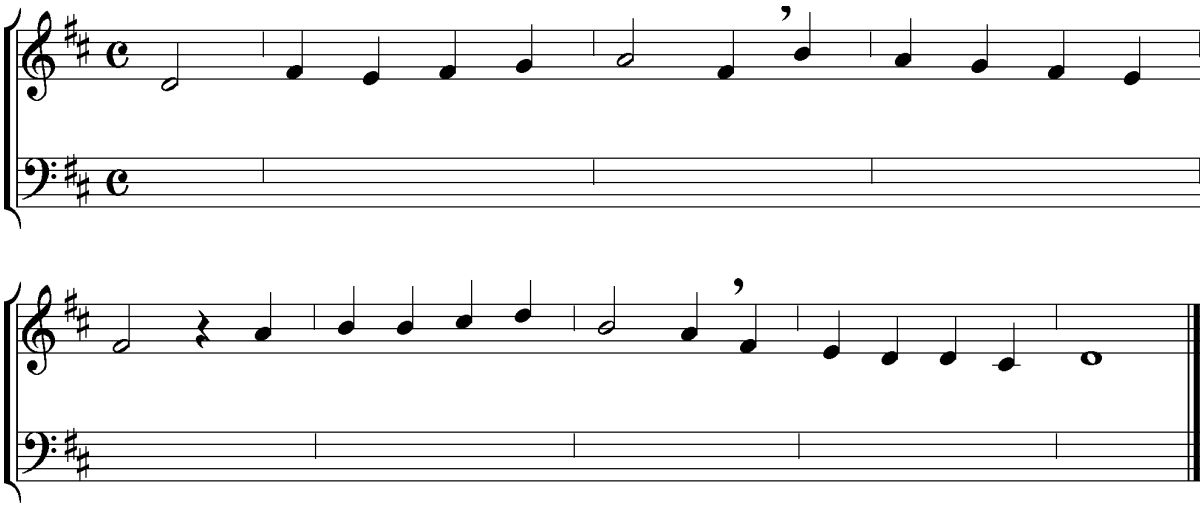
(a) *Nun jauchzt dem Herren, alle Welt* (Hannover, 1646)



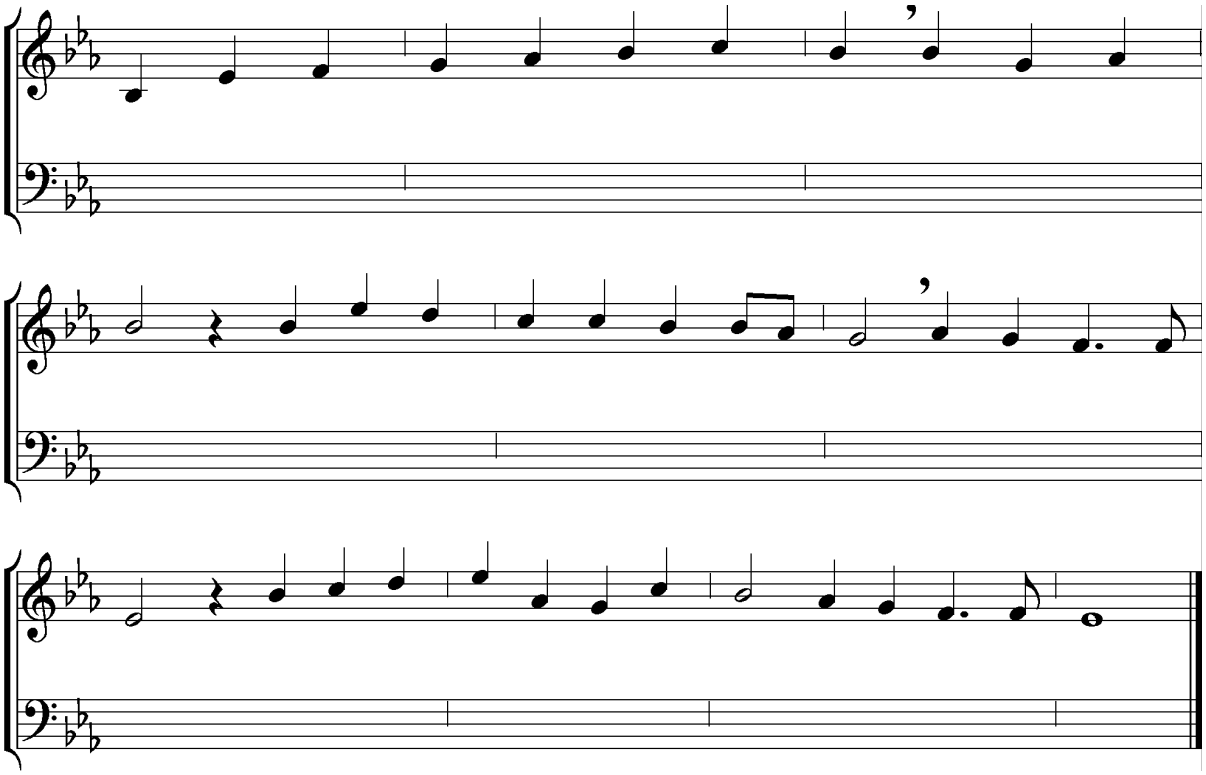
(b) *Nun danket all und bringet Ehr* (Johann Crüger, 1653)



(c) *Christus der ist mein Leben* (Melchior Vulpius, 1609)

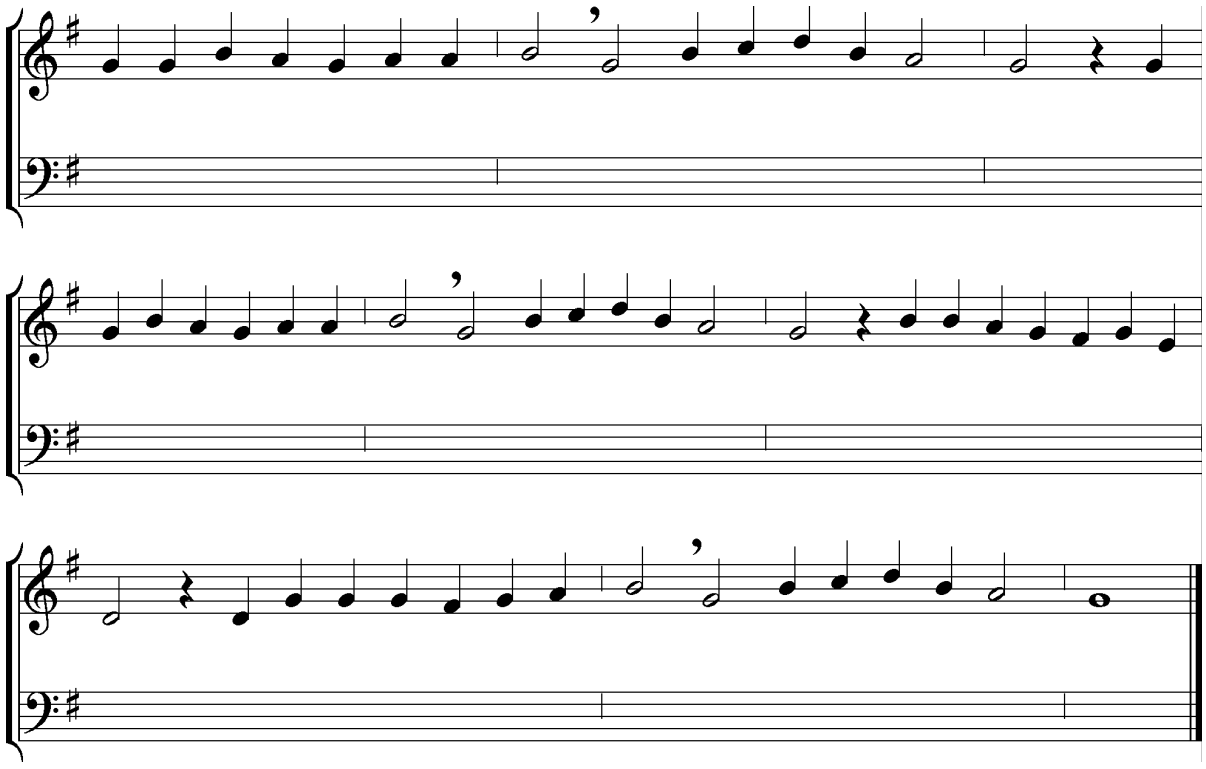


(d) *Halleluja, de blijde toon* (traditional Dutch Easter hymn)

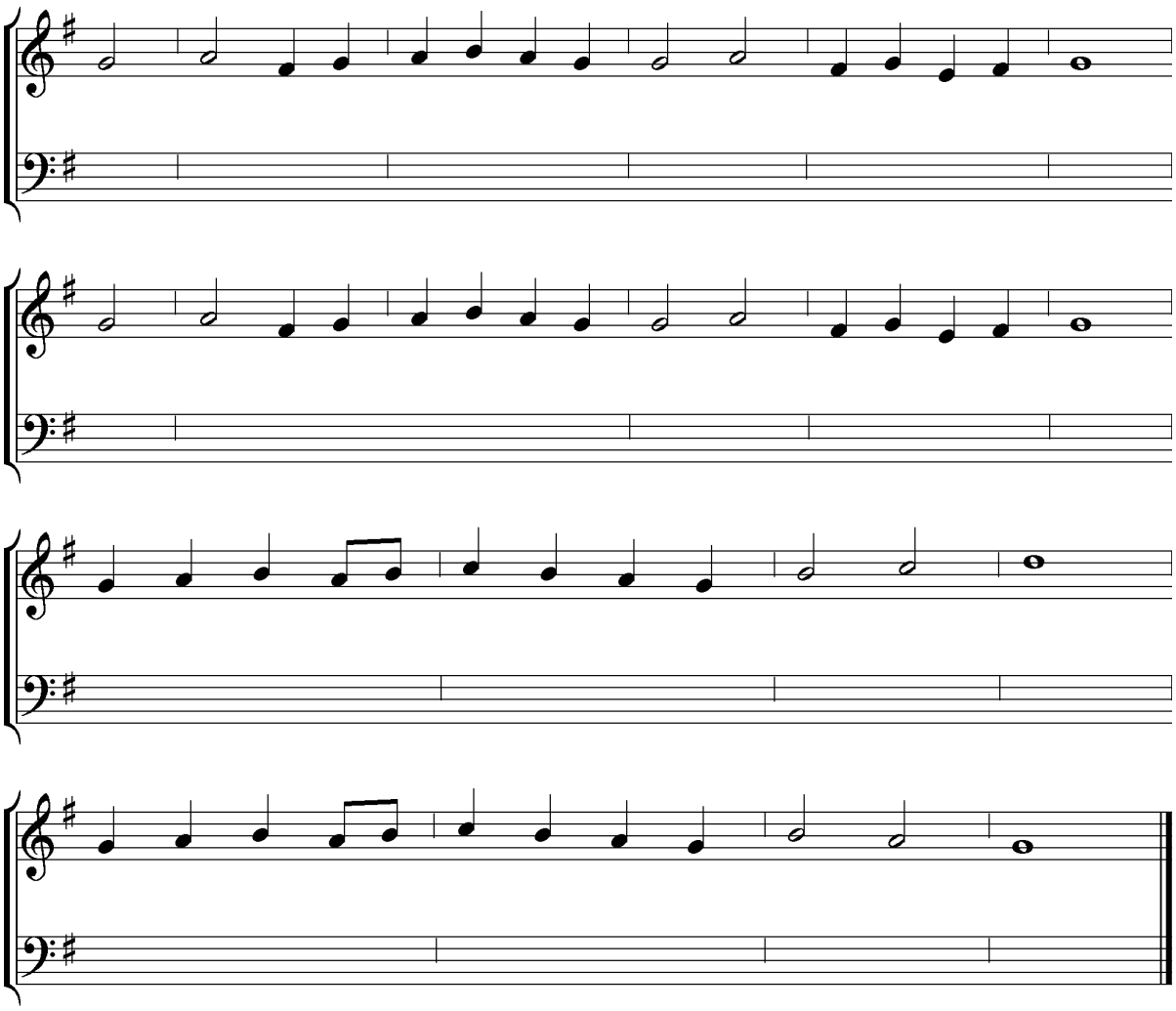


In many hymn tunes, phrases are repeated. In such cases, it is perfectly acceptable to repeat the harmonisation as well - history proves that this was the rule rather than the exception. However, writing an alternative harmonisation does encourage us to explore other solutions.

(e) *Es ist gewisslich an der Zeit* (Wittenberg, 1533)



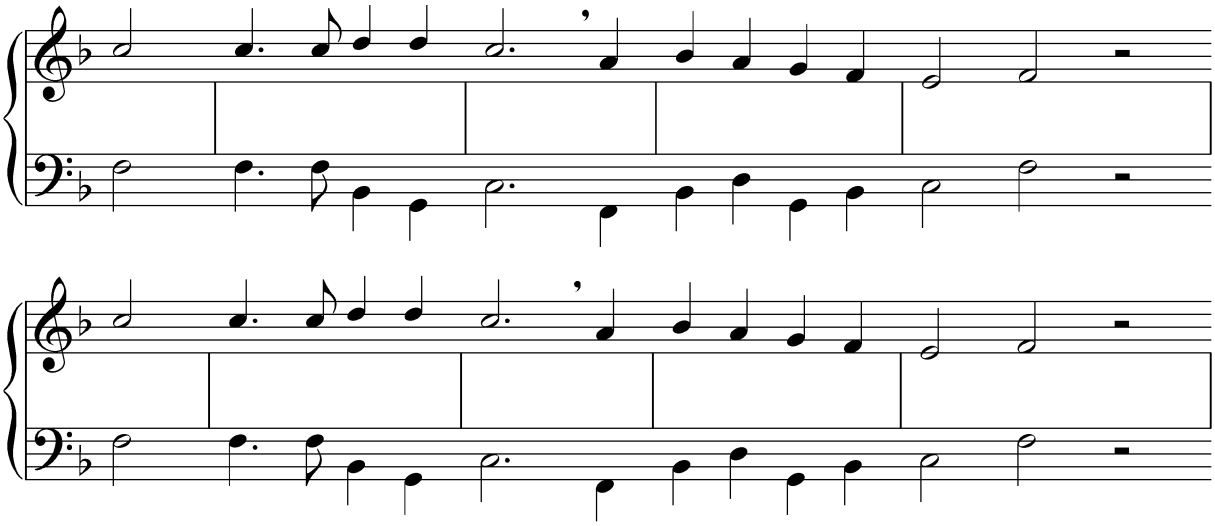
(f) *Gelijk als de witte zwanen* (Antwerp, 1655)

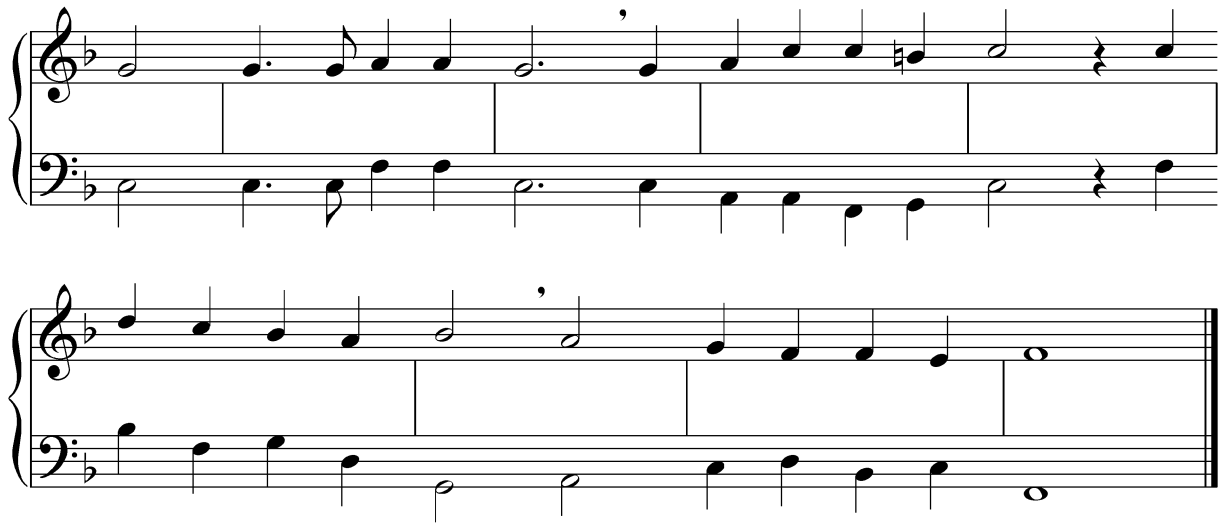


13.* Repeat the above settings with a solo stop and pedals.

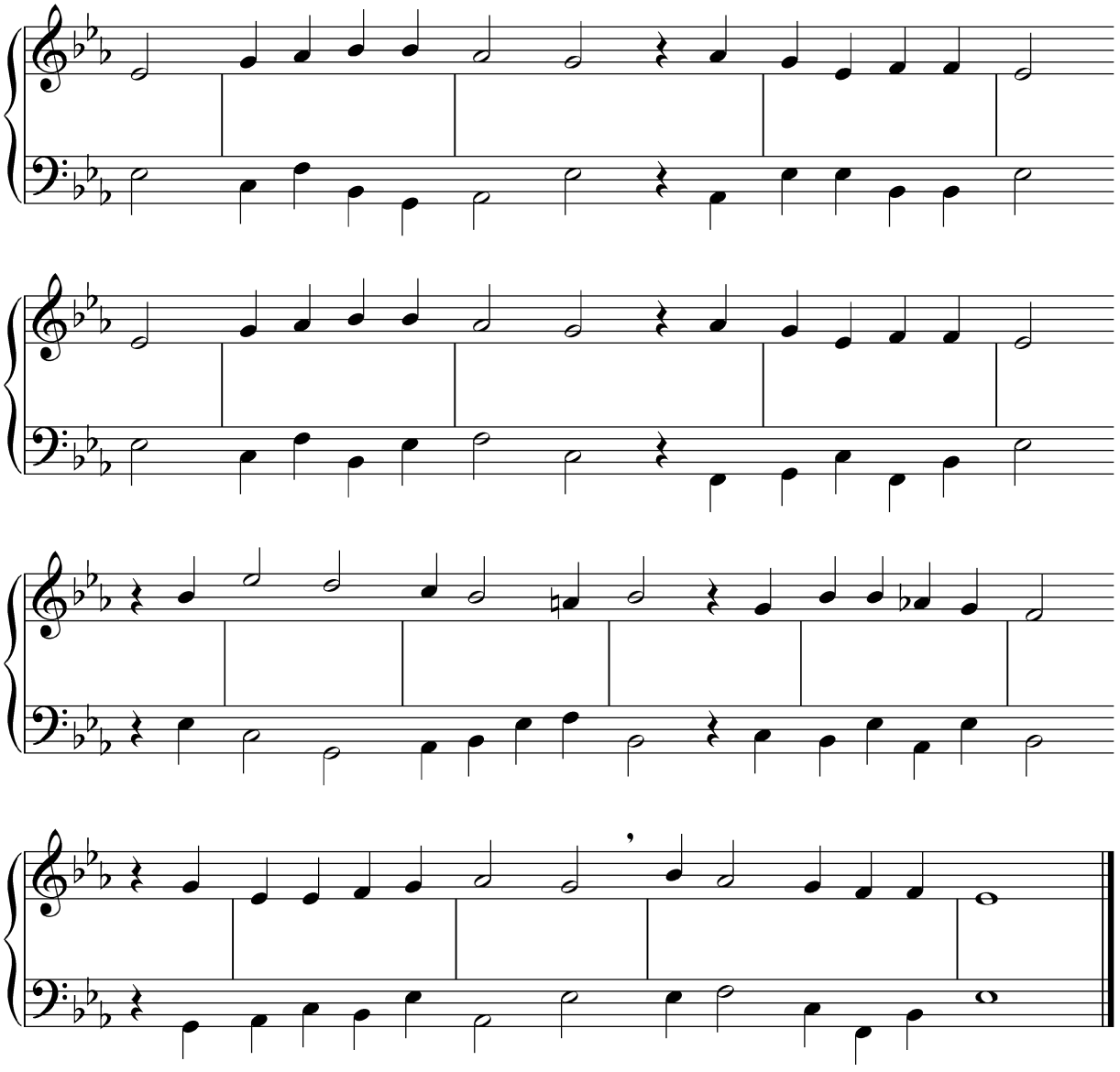
14. Play the following hymns in four parts. Pay attention to the given modulations.

(a) *Nun danket alle Gott* (melody Johan Crüger, 1648)

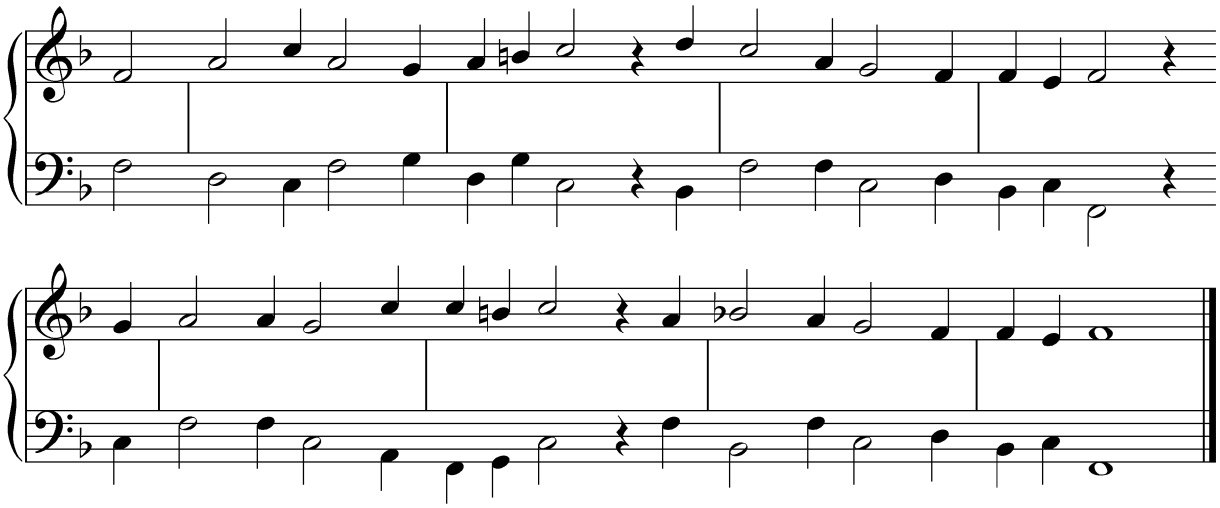




(b) *Wie soll ich dich empfangen* (melody Johan Crüger, 1653)



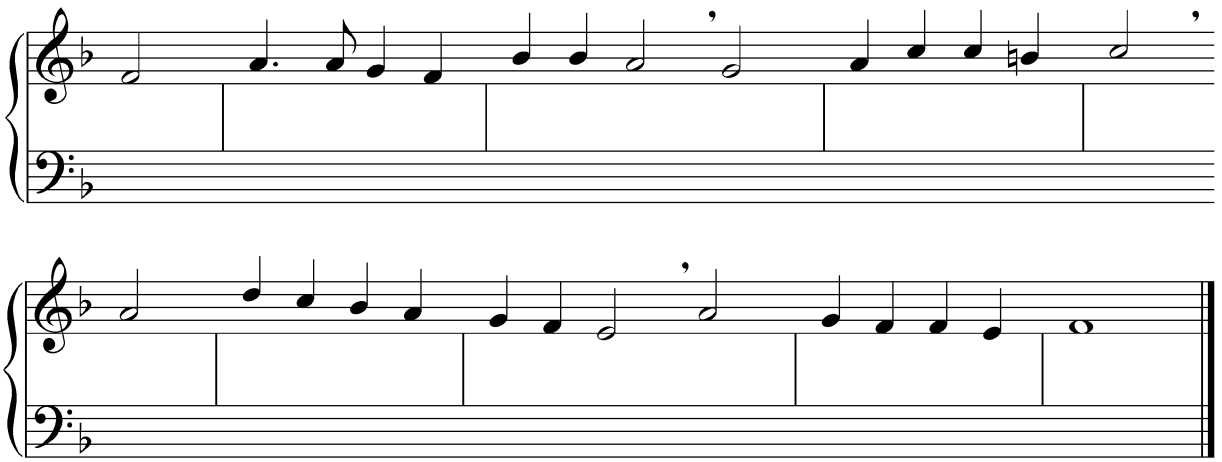
(c) *Herr Jesu Christ, dich zu uns wend* (melody Görlitz, 1648)



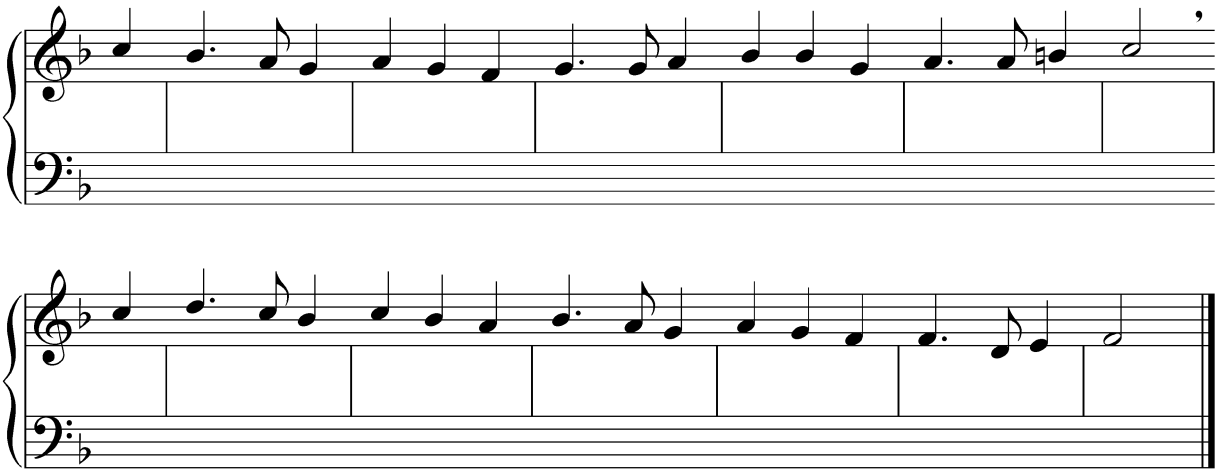
15.* Repeat the above hymns with a solo stop and pedals.

16. Write a bass to the following hymn tunes and practise in four parts. The tunes imply modulations, which require correct treatment.

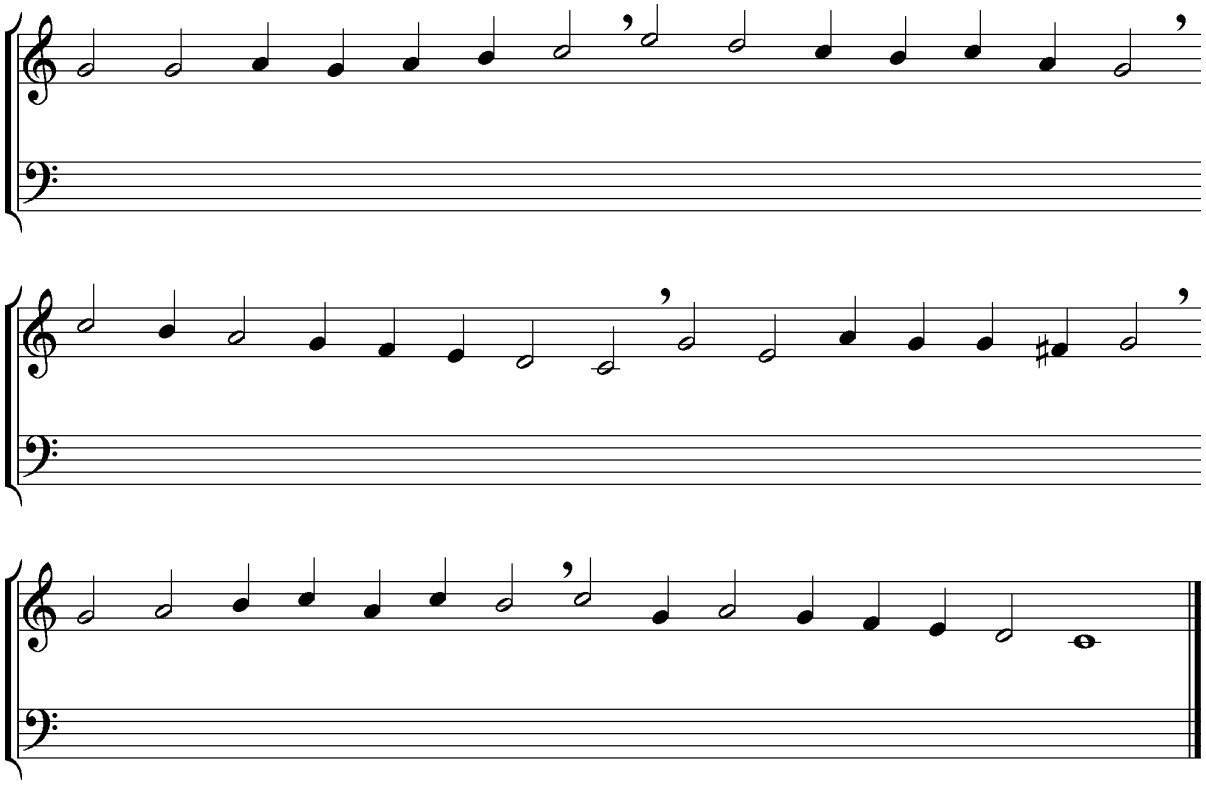
(a) *Winchester Old* (Este's Psalter, 1592)



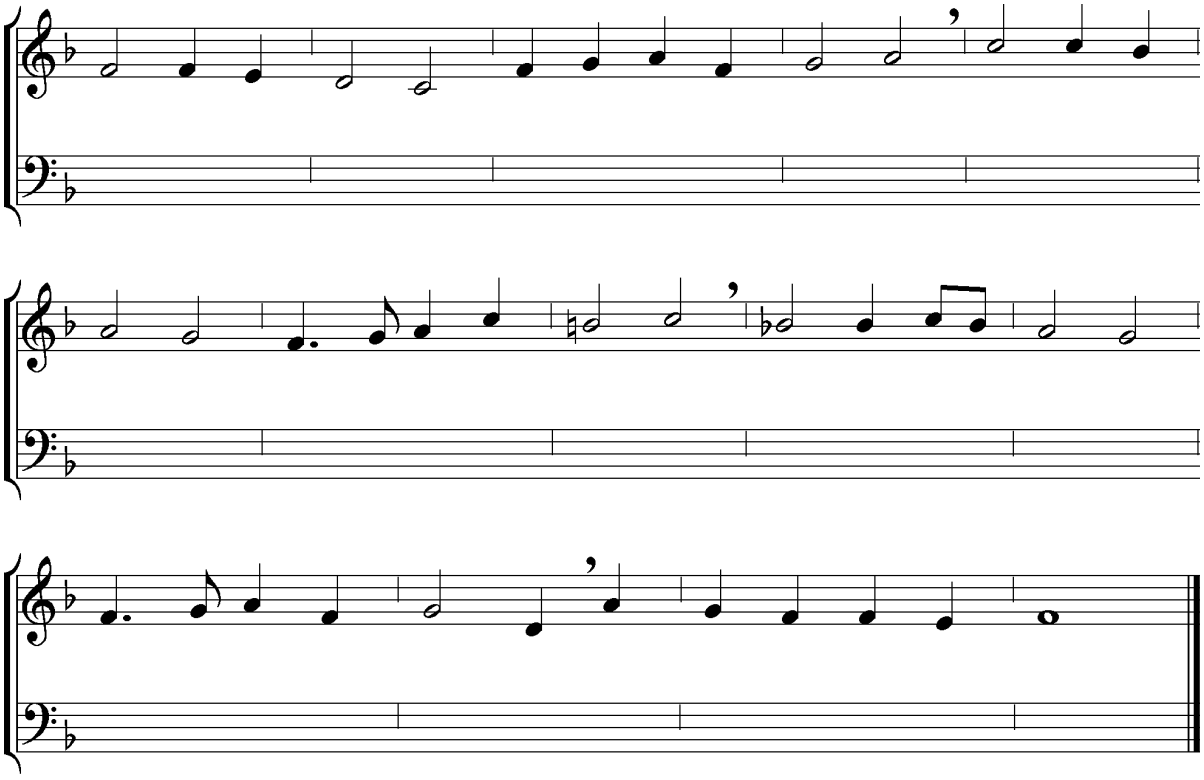
(b) *Ich sehe mit Wonne* (Matthäus Apelles von Löwenstern, 1644)



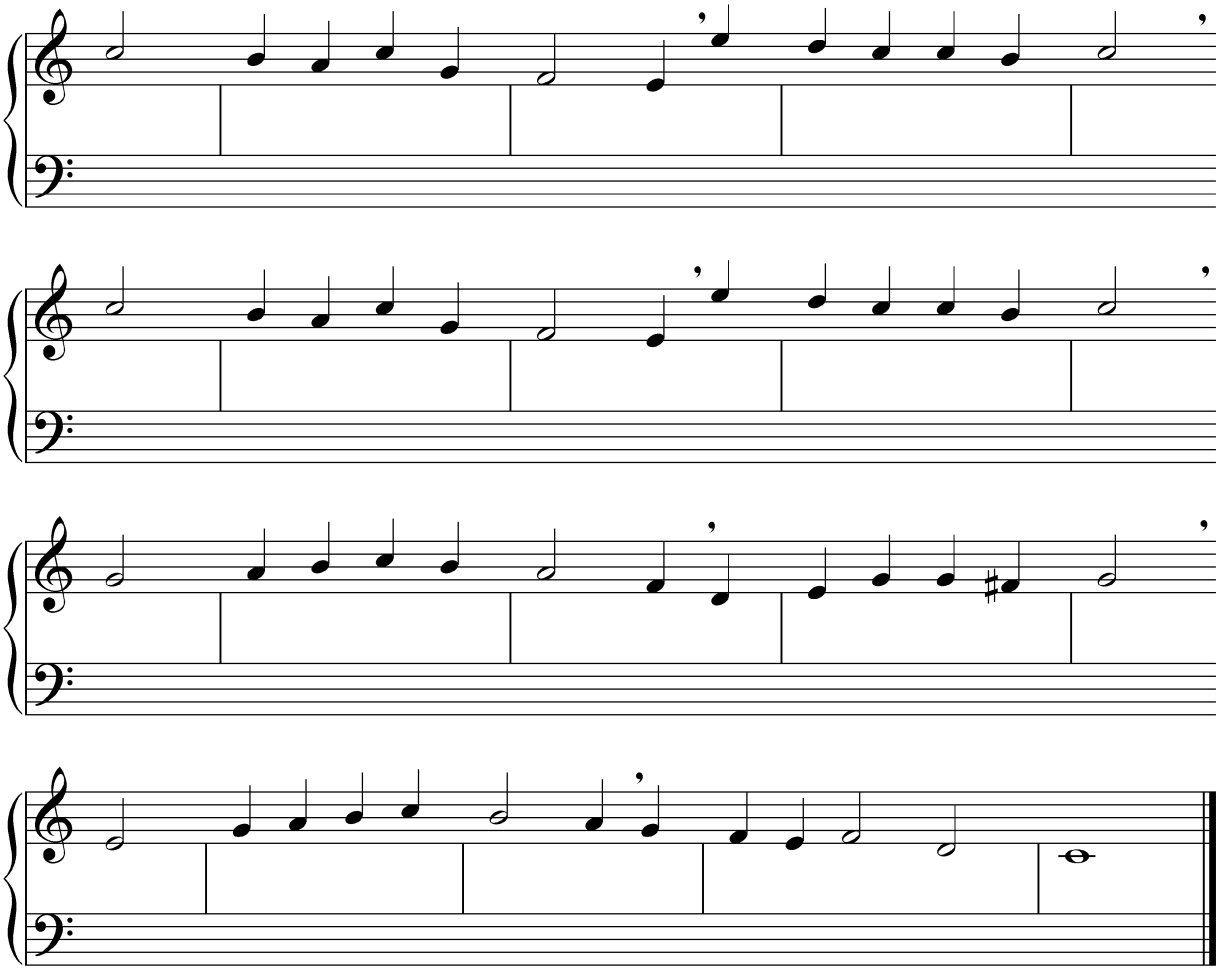
(c) *Lieber Mensch, was zürnest du* (Breslau, ca.1670)



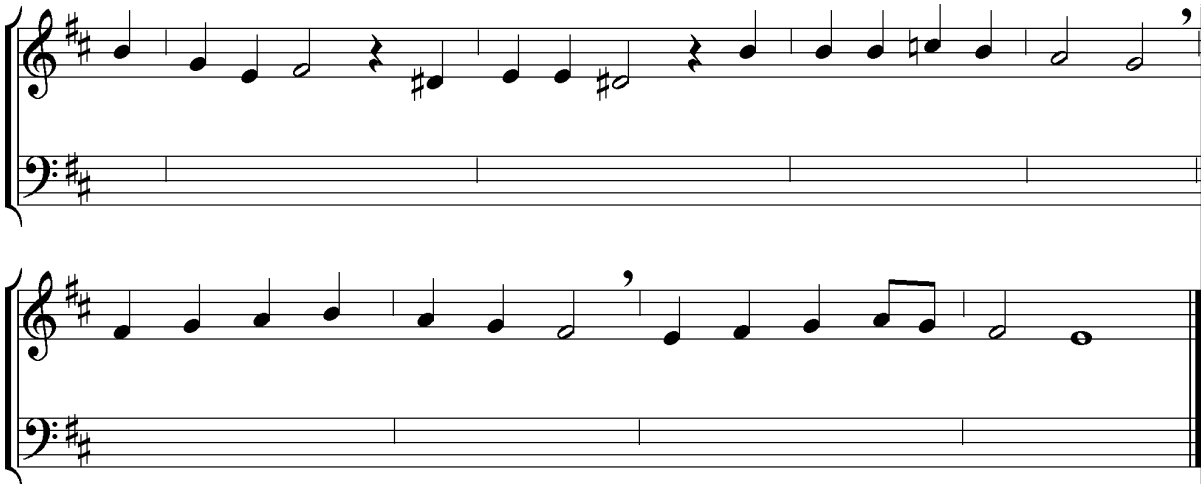
(d) *Zalige ure! vruchtbaar van verblijden* (Camphuysens Stichtelyke rymen, 1680)



(e) *Aus meines Herzens Grunde* (Heinrich Schütz, 1628)



(f) *O Traurigkeit, o Herzeleid* (Mainz, 1628): the key is E minor (despite the key signature - see p.45). Commence the harmonisation on V, modulate subsequently to the parallel major key and return to the home key.



17.* Repeat the above settings with a solo stop and pedals.

18. The hymn tunes in this chapter are in a limited number of keys. Practise transpositions - this time not via the circle of 5ths, but for instance from F to G major, or from D to C major.