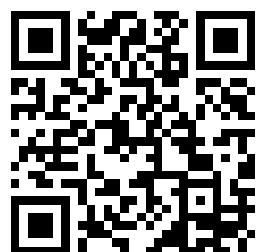


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# MUSIC THEORY



NAVPERS 15,667



# MUSIC THEORY

Prepared by the  
**UNITED STATES NAVY SCHOOL OF MUSIC**  
Washington, D. C.



**STANDARDS AND CURRICULUM DIVISION  
TRAINING  
BUREAU OF NAVAL PERSONNEL**



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## PREFACE

This book was written so that the work in the various theory classes in the U. S. Navy School of Music could be correlated and, so that each section of a particular class, even though taught by different teachers, would cover approximately the same amount of work.

It is a guide which the teachers must *expand* in their presentation of the material to their students. This will be done by full classroom discussion and explanation of each topic. These topics are presented only in their barest form here.

It is to be used in connection with the book of exercises which the students have. In addition, the teacher is expected to use the books in the bibliography, most of which will be found in the school library here, to supplement his teaching and for assignments in outside reading for the student.

Below are outlined some suggestions which the teacher must follow as closely as possible in using this material.

1. Ideas should always be illustrated with concrete examples. Students have difficulty in comprehending abstract ideas or theories, but react at once to specific examples.
2. Students should take part in classroom discussion. When the teacher lectures for long periods of time and the student merely listens, the learning process is too *passive* for the pupil. He needs to take an *active* part in the work, by questions, observation, discussion, etc.
3. The *elementary* theory work is the most *important* part of the curriculum. Here the student learns the terminology and basic fundamentals by which he will acquire all his advanced knowledge of theory. The harmony teacher will have no trouble with the student who is well grounded, but he cannot interrupt a harmony class to explain what an interval or a scale is.
4. In the acquiring of any technic (e.g., the writing of music) the repetition of material in the form of *daily drills* is absolutely necessary. The student may understand an idea at the moment that it is explained to him but he will not make that idea a part of his permanent store of knowledge until he has become thoroughly familiar with it through frequent use. These daily drills should take the form of *outside work* for the student on whatever is the subject of the moment and should include as much written work as possible. To sum up these four points:
  1. Clear explanations with specific examples.
  2. Classroom discussion. Participation by all students.
  3. Emphasis on fundamentals.
  4. As much drill as possible.

## INTRODUCTION

1. **SOUND** is produced by *VIBRATIONS*. These vibrations may be regular or irregular and are transmitted by the air, from the source that produces them to the human ear. The ear, vibrating in sympathy with the vibrations, sends an impulse to the brain where the sensation of sound is recorded.

Regular vibrations produce a musical sound called *TONE*; irregular vibrations produce *NOISE*.

2. **PITCH**. The relative height or depth of musical sounds is called pitch. The more rapid the vibrations the higher the pitch.

3. **INTENSITY**. The relative loudness or softness of musical sounds is called intensity. The greater the size of the vibration (amplitude) the louder the sound.

4. **TIMBRE** or **QUALITY**. The tone-quality of a musical sound (i.e., the thing which enables a person to distinguish between the sound from two different instruments) depends upon the way in which the vibration is made (i.e., string, pipe, etc.), and upon the relative strength of certain *OVERTONES* or *HARMONICS*. These will be discussed later as the *OVERTONE SERIES*.

5. **DURATION**. The length of time a musical sound lasts is called duration.

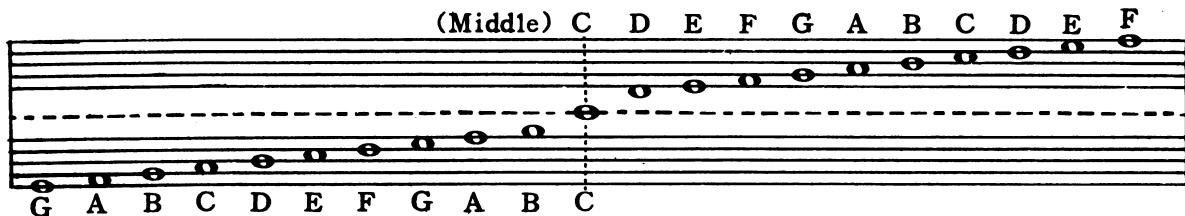
# CHAPTER I

## NOTATION

To indicate musical sounds and their qualities in writing, we use a group of symbols which we call *NOTATION*. The symbols which are most frequently used will be discussed under the following general classification:

- |                                    |  |
|------------------------------------|--|
| 1. STAFF                           | 8. KEY SIGNATURES                              |
| 2. CLEFS                           | 9. DYNAMIC INDICATIONS                         |
| 3. NOTES                           | 10. TEMPO INDICATIONS                          |
| 4. RESTS                           | 11. MUSICAL ABBREVIATIONS                      |
| 5. ALTERATIONS                     | 12. NAMES OF OCTAVES                           |
| 6. TIME SIGNATURES                 | 13. NAMES OF MUSICAL INSTRUMENTS<br>AND VOICES |
| 7. ARTIFICIAL DIVISION<br>OF NOTES | 14. MELODIC EMBELLISHMENTS                     |

1. *STAFF*. The relative pitch of musical sound is indicated on a series of lines called the Staff. The higher the position of the notes on the staff, the higher the sound that is represented. Originally there was a *GREAT STAFF* consisting of eleven lines. The first seven letters of the alphabet are used as names for sounds. The following example will show the arrangement of the various pitches with their proper letter-names arranged on the Great Staff.



For the sake of convenience in modern notation, we use only a five line portion of this staff. It is necessary to indicate *which five line portion* of the Great Staff is to be used. This is done by means of clefs.

2. *CLEFS*. There are three kind of clefs, each named by the letter-name of the tone upon which it is centered.



G Clef



C Clef



F Clef

The G and F clefs are the most frequently used. In writing music for the piano, organ or voices, these two clefs will be used together.



The G clef is commonly called the *TREBLE* clef; the F clef may be called the *BASS* clef.

To indicate the middle C for either staff, an auxiliary line is used (the original middle line between the two groups of five lines.) This is called a leger line.

The C clef is used principally in orchestral writing. The position of this clef always indicates the line on which "Middle C" occurs. It is a mistake to call this the "Movable clef." It may appear upon any of the first four lines of the five line staff, but it will be seen from the following examples that the lines of the staff are moved, not the clef.

Middle C

Bass	Baritone	Tenor	Alto	Mezzo-Soprano	Soprano	Treble	Super-Treble
------	----------	-------	------	---------------	---------	--------	--------------

As above, each position of the C clef, in relation to the five line staff, has a name. The Alto and Tenor are the most frequently used of the C clefs in present day orchestral writing, hence, the student must learn these thoroughly. Later, when we study transposition we will take up all of the clefs.

These different clefs are used so that a particular melody or line can be written within the boundaries of the five line staff, thereby making the use of a great many leger-lines unnecessary.

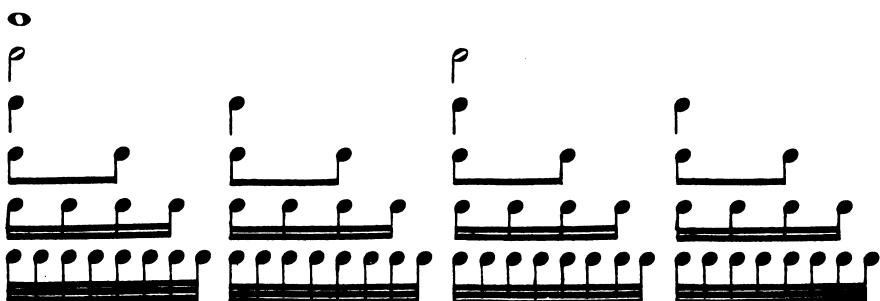
3. *NOTES.* As has been stated above the duration of musical sound is expressed by symbols of varying shapes called notes. The ones in use to-day with their proper names are listed below.

- — Whole-note
- Half-note
- Quarter-note
- Eighth-note

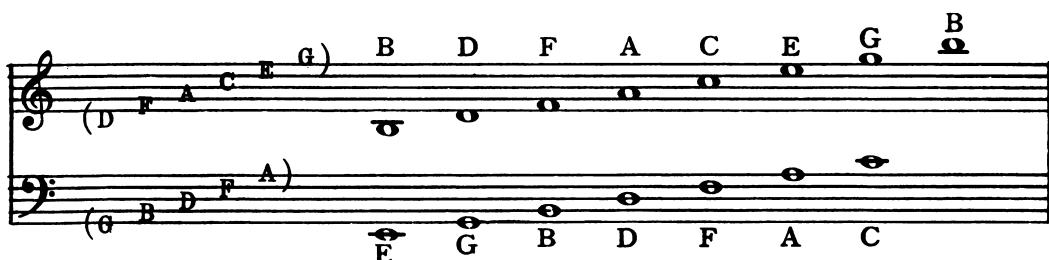
- Sixteenth-note
- Thirty-second-note
- Sixty-fourth-note

The names of the above notes are derived from their relation to a measure of common time; i.e., the whole-note lasts for a whole measure, the half-note for half of a measure, etc.

Each of the notes in the order given is half the value of the preceding one. This will be seen from the following example.



These notes not only indicate the duration of a musical sound but by their placement on the staff they indicate the pitch of the musical sound. The notes are referred to by the letter-name of the line or space which they occupy.



As shown in the above example the staff may be extended by the use of *LEGER-LINES* for pitches that lie outside its range.

This gives us *two* names which we must use in referring to the notes. For example we say, "a half-note B", or "C a quarter-note", etc. It will be seen that one of the two names we give to the note refers to its duration, i.e., "whole note"; the other name refers to the position of the note on the staff, i.e., the letter-name of the note such as "A". "B", or "C".

These notes, it must be understood, represents only the *relative* duration of the sounds. The *actual* duration depends upon the speed at which the music is played.

It is necessary for the student to learn to write correct and *legible* manuscript. Here are a few things to remember. The teacher will explain further and give the students exercises for practice.

**STEMS** go up, for the notes on the lower half of the staff, and are always placed to the right of the **NOTE-HEAD**. Stems go down and are placed to the left for notes on the upper half of the staff. The stem for the note on the middle line may go either way.



When two parts are written on one staff the stems for the top part all go up, the stems for the lower part all go down regardless of the position of the note-head on the staff.



When a composition begins with a partial measure, the last measure should have only as many beats as are missing from the beginning. This will be clearer when we study time and rhythm.



When a *DOT* is placed after a note, the duration is increased by one-half the original note value.

$$\text{d} \cdot = \text{d} + \text{d} \quad \text{or} \quad \text{d} \cdot = \text{d} + \text{d}$$

Sometimes a second dot is added. This increases the duration by one-half the value of the preceding dot.

$$\text{d} .. = \text{d} + \text{d} + \text{d}$$

Another way of increasing the duration of a musical sound is by the use of the *TIE*. Two or more notes of the same or different value may be connected in this way. The resultant sound will be equal in duration to the sum of the various notes tied.

$$\text{d} - \text{d} = \text{d} \cdot \quad \text{or} \quad \text{d} - \text{d} - \text{d} = \text{d}$$

4. *RESTS*. During the course of a musical composition, it may be necessary for one or more of the parts or voices to remain silent for a period of time. These silences are indicated by signs called rests. The rests correspond exactly in duration to the notes that have a similiar name.

	Whole-rest		Sixteenth-rest
	Half-rest		Thirty-second-rest
	Quarter-rest		Sixty-fourth-rest
	Eighth-rest		

These are placed on the staff like this:



Whole-rest,

Half-rest,

Quarter-rest,

Eighth-rest, etc

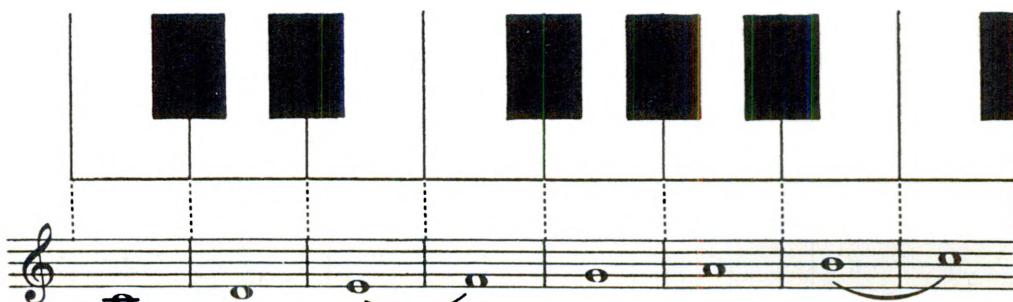
Dots are also used after rests. The duration of the rest is increased in accordance with the rule previously mentioned.

$$\text{Rest} \cdot = \text{Rest} + \text{Eighth-rest}$$

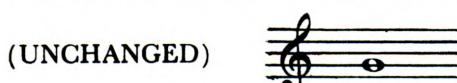
$$\text{Rest} \cdot \cdot = \text{Rest} + \text{Eighth-rest} + \text{Sixteenth-rest}$$

5. *ALTERATIONS*. The smallest distance from one tone to another is called a *SEMITONE*, or *HALF-STEP*. In the alphabetical order of sounds, the notes represented are not all the same distance apart. Some of the notes are a semitone apart while others are a *WHOLE-TONE* or *WHOLE-STEP*; the whole-step being equal to two half-steps. Between E and F, and between B and C there is a half-step.

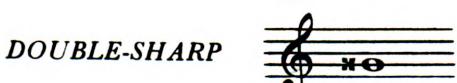
Between all the other notes there is a whole-step.



The extra half-step between the notes that are a whole-step apart may be filled in by the use of alterations (also called accidentals). These are:



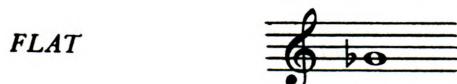
— Raises the note one half-step



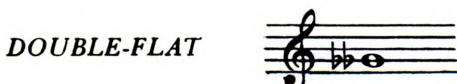
— Raises the note one whole-step



— Cancels the previous accidental

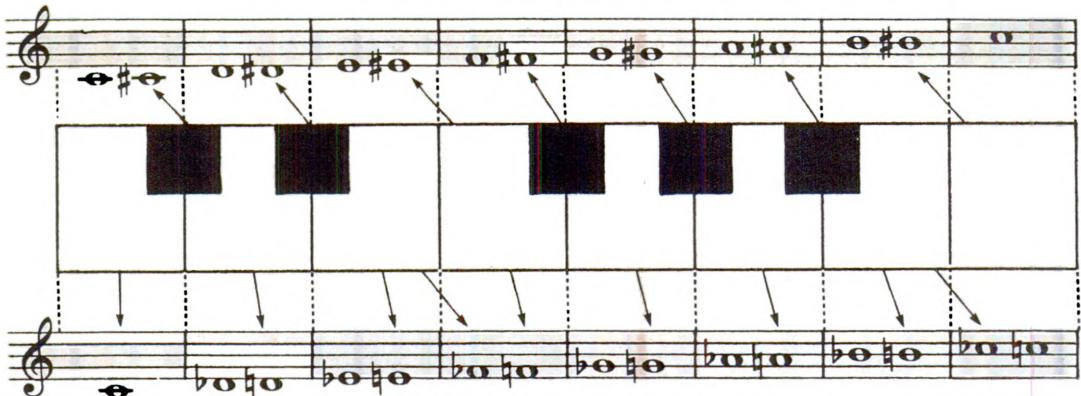


— Lowers the note one half-step



— Lowers the note one whole-step

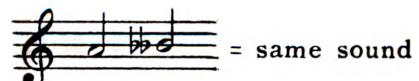
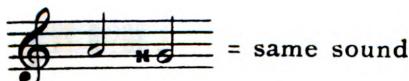
These signs are placed immediately in front of the note which they are to affect. This gives us all of the possible notes in the scale as will be seen from the following example.



The student should also notice from the above diagram that many of the sounds may be written in two ways, i.e., E-flat and D-sharp have the same sound. When we have two different notes that have the same sound, as in the above example, their relationship is said to be *ENHARMONIC*.



The natural sign is used to cancel a sharp, double-sharp, flat or double-flat that has previously been used to raise or lower a note. The double-sharp and the double-flat respectively raise and lower the note one whole-step, hence it is often more practical to write this sound by using the next higher or the next lower note in the scale. For this reason the double-sharp and double-flat will occur less frequently than the sharp, flat or natural.



Any accidental affects all the notes of the same letter-name throughout an entire measure, unless it is contradicted by another accidental. The succeeding measures are not affected, but when the note of the same letter-name occurs in its natural form in a measure immediately following its altered form, it is best to *clarify* this return by the use of the natural sign.



If an accidental is to apply to the same note but at a different octave, it is better to indicate this by the use of another accidental.

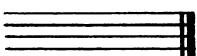


6. **TIME-SIGNATURES.** In any melody certain notes will be relatively more important than others. These more important notes seem to have more weight or *ACCENT* than do the notes of lesser importance. This accent generally occurs at some regular interval. This grouping of sounds by means of accent produces one of the most important elements in music—*TIME*. The student must not confuse this with the word *TEMPO*, which has to do with the rate of speed at which a piece of music is performed. The teacher will make this distinction clear.

We indicate this recurring accent in the music by placing a perpendicular line on a staff in front of the accented note. These lines are called *BAR-LINES*, and the space between two successive bar-lines is called a *MEASURE*.



At the conclusion of a composition or an important section of a composition we place a *DOUBLE-BAR*.



These accents occur, not only at *regular* intervals, but also at *greater* or *smaller* intervals of time. This produces measures of various lengths. Contained in each measure will be the accented note followed by the notes of lesser importance lasting up to the time that another strong accent occurs.

These patterns of strong and weak accents have a *regular pulsation* for a background. We call these pulsations *BEATS*. When we pat our feet or march to a piece of music we are expressing this background of beats.

The most common patterns produced, depending upon the recurrence of the strong accent, contain two, three, and four beats. This is called *DUPLE*, *TRIPLE*, or *QUADRUPLE* time according to the number of beats each group contains. These different times are written like this:

Duple (in which each measure is equally divided by *TWO* beats)



Triple (in which each measure is equally divided by *THREE* beats)



Quadruple (in which each measure is equally divided by *FOUR* beats)



Quadruple time is actually an extension of duple time except that the accent on the third beat is not quite as strong as the accent on the first beat.

Various other groupings are possible, such as five, six, or seven beats to a measure but these are actually combinations of the above three basic patterns.

The same kind of time is generally used throughout a piece or section of music, and in order to make this clear to the performer, we indicate the time at the beginning of the composition by means of a **TIME-SIGNATURE**. The time-signature consists of two figures placed one above the other like this:  $\frac{3}{4}$ ; they are written on the staff immediately after the clef sign.



The upper figure indicates the *number of divisions or beats* in a measure, the lower figure indicates the *kind of note* to be used for each beat. Thus, in  $\frac{2}{4}$  time, there will be two beats in each measure, a quarter note to each beat. In  $\frac{3}{8}$  time there will be three beats to the measure each represented by an eighth note.

The lower figure will always be one of these: 1, 2, 4, 8, 16, (32, 64), i.e., a figure which expresses the name of a kind of note such as, quarter-note (4), half-note (2), etc. The upper figure may be any number but usually this is not greater than 12.

When each beat of a measure is divisible by two (i.e., when the beat can be represented by two notes of the next smaller note-value), the time is called **SIMPLE TIME**. Thus we can have, **SIMPLE DUPLE TIME**, **SIMPLE TRIPLE TIME**, and **SIMPLE QUADRUPLE TIME**.

Simple  
Duple  
Time

The image shows three staves of music. The first staff is labeled "Simple Duple Time". It has a treble clef and a time signature of 2/2. The second staff has a bass clef and a time signature of 2/2. The third staff has a treble clef and a time signature of 2/4. Each staff contains two measures of music. The first measure of each staff consists of a single note. The second measure of each staff consists of two notes. The notes are represented by vertical stems with small horizontal dashes indicating their value. The first staff uses quarter notes, the second staff uses eighth notes, and the third staff uses sixteenth notes.

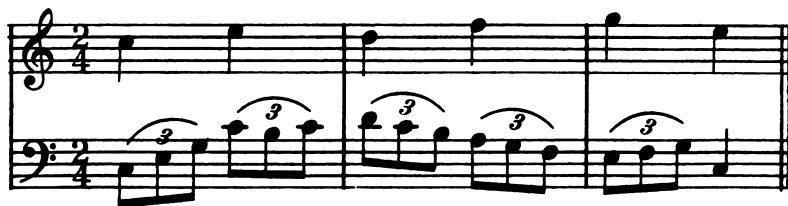
Simple  
Triple  
Time

Three staves of music for Simple Triple Time. The top staff uses a treble clef and a common time signature (indicated by a '3'). The middle staff uses a bass clef and a common time signature (indicated by a '3'). The bottom staff uses a bass clef and a common time signature (indicated by a '3'). Each staff consists of two measures of music.

Simple  
Quadruple  
Time

Three staves of music for Simple Quadruple Time. The top staff uses a treble clef and a common time signature (indicated by a '4'). The middle staff uses a bass clef and a common time signature (indicated by a '4'). The bottom staff uses a bass clef and a common time signature (indicated by a '4'). Each staff consists of two measures of music.

However, sometimes the music requires that each beat be divisible by 3 (i.e., a triplet of the notes next smaller in value).



To avoid marking triplets throughout a composition, a new time signature is employed. Thus, the preceding example would be written as follows:



This signature means that six-eighths of a whole note are found in each measure; they will be divided into two groups of three. Instead of having two quarter-notes in each measure, we now have two *dotted* quarter-notes.

When the beats of a measure are dotted, the time is called *COMPOUND TIME*. So we have *COMPOUND DUPLE TIME*, *COMPOUND TRIPLE TIME*, and *COMPOUND QUADRUPLE TIME*, the time signatures being as follows:

Compound  
Duple  
Time

Compound  
Triple  
Time

Three staves of musical notation for compound triple time. The top staff shows a quarter note followed by two eighth notes. The middle staff shows a quarter note followed by two eighth notes. The bottom staff shows a quarter note followed by two eighth notes.

Compound  
Quadruple  
Time

Three staves of musical notation for compound quadruple time. The top staff shows a quarter note followed by three eighth notes. The middle staff shows a quarter note followed by three eighth notes. The bottom staff shows a quarter note followed by three eighth notes.

It is important to observe that the divisions or beats of any measure may be expressed by their equivalent in notes of longer or shorter duration, or by their equivalent in notes and rests, e.g.:



7. **ARTIFICIAL DIVISION OF NOTES.** In discussing note values in a previous paragraph we gave these divisions of a whole-note:

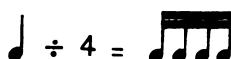
1	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{1}{16}$	$\frac{1}{32}$	$\frac{1}{64}$
Whole-note						
divided by:	2	4	8	16	32	64

The above figures 2, 4, 8, 16, 32, and 64 represents the NATURAL DIVISIONS of a note. However, it is possible to divide a note into other fractional parts such as one-third (3), one-fifth (5), one-sixth (6), etc. These other figures (such as 3, 5, 6, 7, 9, etc.) represent the ARTIFICIAL DIVISIONS of a note.

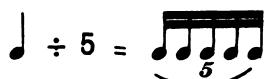
#### Artificial Divisions of Plain Units

For these artificial divisions we use the regular note values. Choose the kind of note for the artificial division that represents the nearest natural division. If the artificial number is equa-distant from two of the natural division numbers, use the note value represented by the *smaller* number. Then, place the number of the artificial division above the note-group. For example:

We want to divide a quarter-note into 5 equal parts. The nearest natural division is 4.



Write five sixteenth-notes with the figure 5 above (or below) them.



To divide a half-note into 6 equal parts we would use six eighth-notes with the figure 6 above (or below) them, because 6 is equa-distant between 4 and 8. Four is the smaller of the two numbers so we use eighth-notes which represent the natural division of a half note divided by four.



#### Artificial Divisions of Dotted Units

For artificial divisions of dotted notes in compound time we mentally disregard the dot and divide the unit according to the above procedure. After the kind of note has been determined we add a dot, or as many dots as followed the original note, to each note in the final group. For example:

To divide a dotted whole-note into five equal parts we would disregard the dot and divide the whole-note into five quarter notes.



Then add a dot to each of the quarter notes in the final group.



To divide a double-dotted half-note into nine equal parts we would mentally suppress the two dots and divide the half-note in the usual way.



When notes are grouped together they are given the following names.

A group of:

2 equal notes (or equivalent) is called a duplet (or duolet)

3     "     "     "     "     triplet

4     "     "     "     "     quadruplet (or quartolet)

5     "     "     "     "     quintuplet (or quintolet)

\*6     "     "     "     "     sextuplet and double-triplet (or sextolet)

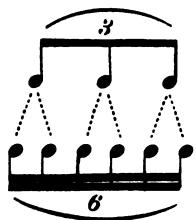
7     "     "     "     "     septuplet (or septolet)

8     "     "     "     "     octuplet (or octolet)

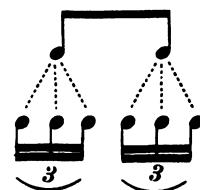
9     "     "     "     "     nonuplet (or nonolet)

10    "     "     "     "     dextuplet (or dextolet)

\*There is a difference between a sextuplet and a double-triplet. The sextuplet is derived from a triplet (each note divided by 2); a double triplet is derived from a duolet (each note divided by 3).



SEXTUPLET



DOUBLE-TRIPLET

8. **KEY-SIGNATURES.** Key-signatures are the alterations which are placed at the beginning of a piece of music, between the clef sign and the time signature, and which affect the pitches indicated for the entire piece of music. That is, a sharp placed on the "F" line or a flat placed on the "B" line, will affect all of the notes of this pitch throughout the piece without further indication. The derivation of these signatures and their specific uses will be discussed in detail in a later chapter on scales.

9. **DYNAMICS.** Dynamic markings show the performer the degree of relative loudness or softness at which a piece is to be played. The words commonly used are listed below with their abbreviations and meanings.

Pianissimo.....	(pp)	very soft
Piano.....	(p)	soft
Mezzo piano.....	(mp)	medium soft
Mezzo forte.....	(mf)	medium loud
Forte.....	(f)	loud
Fortissimo.....	(ff)	very loud

There are other terms which refer to *shadings* or *nuances* in music. These all indicate some sudden or progressive *change* in the level of volume.

Forte piano.....	(fp)	loud and suddenly soft
Piano forte.....	(pf)	soft and suddenly loud
Sforzando.....	(sfz)	reenforce (an explosion)
Crescendo.....	(cresc)	gradually louder
Diminuendo; decrescendo.....	(dim; dec.)	gradually softer
Morendo.....	(mor)	dying away; softer
Perpendosi.....	(perd)	dying away; softer
Smorzando.....	(smorz)	dying away; softer

10. **TEMPO.** At the beginning of a composition we often find certain words which tell us the approximate rate of speed at which the piece is to be performed. These words are usually placed above the first measure and after the time and key-signatures. They indicate, only in a general sort of way, the speed of the basic background rhythm. For exact indication of speed we rely upon the metronome. The most commonly used indications of tempo follow:

Laghissimo.....	broad, stately
Largo.....	" "
Largamente.....	" "
Larghetto.....	" "
Grave.....	heavy, dragging
Lento.....	slow
Adagissimo.....	"
Adagio.....	"
Adagietto.....	"
Andantino.....	"
Andante.....	moving, going along, moderately slow
Moderato.....	" " moderately
Allegretto.....	" " "
Allegro.....	brisk, lively
Vivace.....	fast
Presto.....	rapid
Prestissimo.....	rapid, quick

The general pace may be modified by other words, which imply an acceleration, a slackening of speed, a suspension or return to the original tempo. The principal words are:

For speeding up the tempo:

Accelerando.....	gradually accelerating
Stringendo.....	suddenly accelerating, usually with a crescendo
Piu Mosso.....	a steady rate of speed, faster than proceeding movement

For slowing up the tempo:

Rallentando.....	gradually growing slower
Ritardando.....	" " "
Ritenuto.....	a sudden drop to a slower rate of speed
Meno Mosso.....	" " " " " " " " "
Calando.....	" " " " " " " " "
Morendo.....	growing slower and softer
Smorzando.....	" " " " "

Return to the original tempo:

a tempo.....	back to general tempo
Primo Tempo (Tempo 1).....	back to first tempo
Stesso (Lo stesso, L'istesso).....	the same tempo as before (usually after a change of time signature)

There are certain words which may be used along with the general tempo indication which give a more definite idea of the *character* of the piece; the principal words used for this are:

Amabile.....	amiable
Affettuoso.....	affectionately
Amoroso.....	very affectionately, lovingly
Agitato.....	agitated
Appassionato.....	passionately
Brillante.....	brilliant
Con brio.....	with brilliancy
Cantabile.....	as if sung
Con anima.....	with animation
Con fuoco.....	with fire
Con spirito.....	with wit, spirit
Capriccioso.....	capricious
Con bravura.....	bravely
Con delicatezza.....	with delicacy
Con grazia; Grazioso.....	with grace; graceful
Con tenerezza.....	with tenderness
Delicato.....	delicately
Dolce.....	softly
Doloroso.....	with deep sorrow
Drammatico.....	dramatically
Energico.....	energetically
Espressivo; Con espressione.....	expressive, with expression
Giocoso.....	gay, jolly
Innocente.....	innocent
Lagrimoso.....	as with tears
Maestoso.....	masterly, majestic
Furioso.....	furious, with fury
Nobile.....	nobly

Pesante.....	heavily
Pomposo.....	pompous
Religioso.....	religiously
Risoluto.....	resolutely
Rustico.....	rustic
Simplice.....	simple, with simplicity
Sostenuto.....	sustained
Tranquillo.....	calm, tranquil
Tristamente.....	sad, with sadness
Vivace.....	lively, quick

Sometimes a general tempo may be modified by one of the following adverbs:

Poco.....	a little
(Rit. poco a poco—slower, little by little)	
Poco Animato.....	a little faster
Poco piu.....	a little more
Molto piu.....	much more
Non tanto.....	not so much
Non troppo.....	not too much
(Allegro non troppo—lively: but not too fast)	
Assai.....	quite
Quasi.....	such as (like)
Meno.....	less
Poco meno.....	a little less
Sempre.....	always; still
Molto.....	much; more; quite

Besides these commonly used words for indicating tempi, there are other terms applied to the accentuation or articulation of a particular passage. These will be listed here:



= legato.....	smoothly, sustained, connected
= tenuto.....	very sustained, hold for full value
= non-legato.....	semi-staccato, half sustained
= staccato.....	separately, detached, short

II. **MUSICAL ABBREVIATIONS.** There are certain conventional signs and words, in music, used as abbreviations, in order to simplify music-writing.

To indicate that a certain section of music just performed, is to be repeated, we place two dots before the double-bar, like this:



If the end of the section is to be played differently on the repetition, we indicate this by two endings.



*DA CAPO* (*D.C.*) literally means "from the head".

*DAL SEGNO* (*D.S.*) means "from the sign".

*FINE* means "end".

In making a *DA CAPO* the performer returns to the *beginning* of the piece or movement, and repeats the same until *FINE*.

In making a *DAL SEGNO* the performer returns to this sign  and plays to the *FINE*.

The sign,  (sometimes accompanied by the words *AL CODA*) means that the performer (when playing through a *D.C.* or a *D.S.* for the second time) should go from the sign  to that position in the piece or movement marked *CODA*.

If there are any repeated strains, when the player goes back to the beginning to play through the work again, these repeats are generally ignored.

*SIMILE* means "similar" and that the same phrasing, etc., is to be continued.

The following signs, an abbreviation of the words *OTTAVA*, *OTTAVA ALTA*, and *OTTAVA BASSA*, mean that the part written is to be performed an octave higher or lower as the case may be.

Written:  or  = 

(Performed)

Written:  or  = 

(Performed)

*LOCO* cancels the *OTTAVA*, and the passage is played as actually written.

Written:  = 

Below are the symbols used for other repetitions in music:

Written:



Performed:



Written:

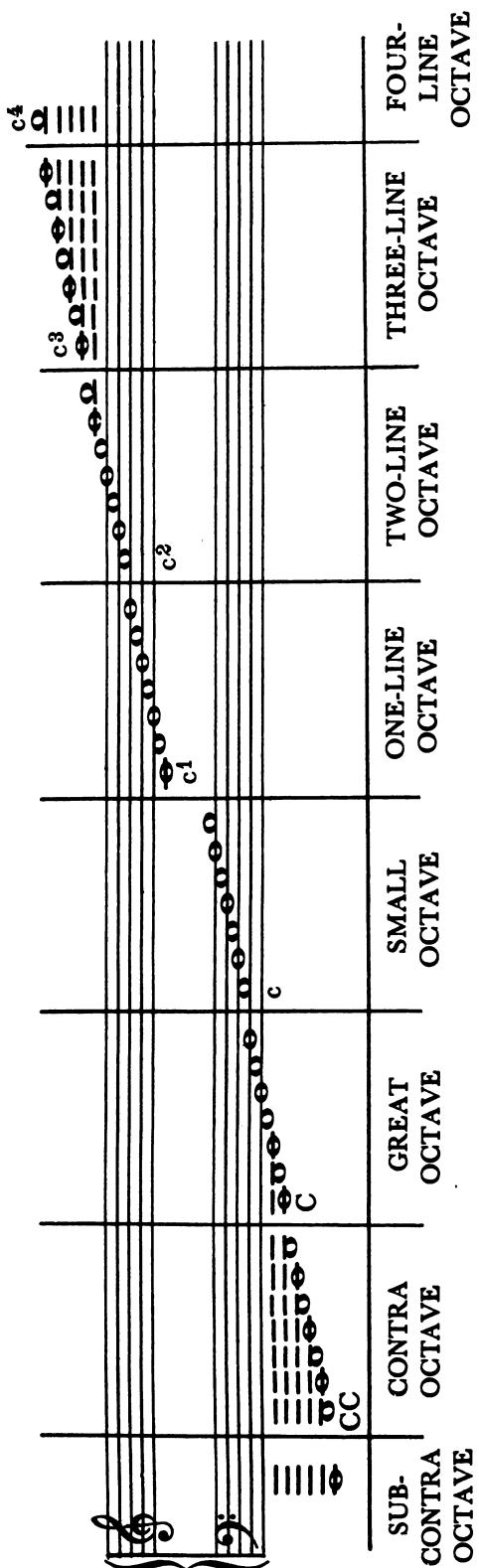


Performed:



(Repeat preceding  
measure)

(Repeat preceding  
two measures)



## 12. NAMES OF OCTAVES

- |                           |  |
|---------------------------|--|
| (Sub-contra-octave) ..... | (CCC — DDD — EEE — FFF — GGG — AAA — BBB) seldom used.   |
| Contra-octave.....        | CC — DD — EE — FF — GG — AA — BB   |
| Great octave.....         | C — D — E — F — G — A — B  |
| Small octave.....         | c — d — e — f — g — a — b  |
| One-line octave.....      | c <sup>1</sup> — d <sup>1</sup> — e <sup>1</sup> — f <sup>1</sup> — g <sup>1</sup> — a <sup>1</sup> — b <sup>1</sup> |
| Two-line octave.....      | c <sup>2</sup> — d <sup>2</sup> — e <sup>2</sup> — f <sup>2</sup> — g <sup>2</sup> — a <sup>2</sup> — b <sup>2</sup> |
| Three-line octave.....    | c <sup>3</sup> — d <sup>3</sup> — e <sup>3</sup> — f <sup>3</sup> — g <sup>3</sup> — a <sup>3</sup> — b <sup>3</sup> |
| Four-line octave.....     | c <sup>4</sup> — d <sup>4</sup> — e <sup>4</sup> — f <sup>4</sup> — g <sup>4</sup> — a <sup>4</sup> — b <sup>4</sup> |

**13. NAMES OF MUSICAL INSTRUMENTS AND VOICES.** In order to talk about music intelligently the student must learn the correct names, keys, and classification of the instruments commonly used in bands and orchestras in this country today. These instruments are usually classified like this:

- (a) **STRINGED** instruments
- (b) **WIND** instruments
  - 1. Woodwind
  - 2. Brass
- (c) **PERCUSSION** instruments
- (d) **KEYBOARD** instruments

(a) The stringed instruments in common use are:

**VIOLIN**—with the music written in the treble clef.



**VIOLA**—with the music written in the alto clef.



**VIOLONCELLO**—('CELLO)—with the music written for the low register in the bass clef; for the medium register in the tenor clef; for the high register in the treble clef.



In former times it was customary for composers to write the 'cello part an octave higher than it was to sound, when writing for this instrument in the *treble* clef. Today this practice has been discontinued, and the actual pitch is written, regardless of the clef employed.

**CONTRA-BASS (DOUBLE-BASS)**—sounding an octave lower than written, and using the bass clef.



In addition to these instruments mentioned above, there are various other stringed instruments such as the guitar, lute, cembalo, etc. which are used occasionally in orchestral works.

All of these stringed instruments (with the exception of the double-bass mentioned above) are **NON-TRANSPOSING** instruments. That is, they sound the actual pitch of the note written for them.

(b) The wind instruments in use today contain several **TRANSPOSING** instruments; that is, the sounds produced on these instruments do not correspond with the written note.

For these transposing instruments, the *NATURAL SCALE* is written in C major, but the actual sounds form the scale of the name of the instrument. For instance, the C major scale of a B $\flat$  trumpet actually sounds the major scale of a B $\flat$ ; the C major scale of an E $\flat$  saxaphone sounds the E $\flat$  major scale; etc. We will explain transposition more thoroughly in a later chapter, but for now it is important for the student to learn the *key* as well as the *name* of each of these instruments.

The non-transposing woodwind instruments which play from the treble clef are:

**FLUTE in C**

**PICCOLO in C**

**OBOE**

The non-transposing woodwind instruments which play from the bass clef are:

**BASSOON**

**CONTRA-BASSOON**—sounding an octave lower than written.

The non-transposing brass instruments which play from the treble clef are:

**TRUMPET (or CORNET) in C**

The non-transposing brass instruments which play from the bass clef are:

**TROMBONE in B $\flat$**

**BASS TROMBONE in F**

**BARITONE (or EUPHONIUM) in B $\flat$**

**TUBA in F, E $\flat$  or BB $\flat$**

The transposing woodwind instruments which play from the treble clef are:

**FLUTE in D $\flat$**

**PICCOLO in D $\flat$**

**ALTO (or BASS) FLUTE in G**

**ENGLISH HORN in F**

**CLARINET in E $\flat$ , B $\flat$  or A**

**ALTO CLARINET in E $\flat$**

**BASS CLARINET in B $\flat$**

**ALTO SAXOPHONE in E $\flat$**

**TENOR SAXOPHONE in B $\flat$**

**BARITONE SAXOPHONE in E $\flat$**

**BASS SAXOPHONE in B $\flat$**

There are no transposing woodwind instruments which play from the bass clef.

The transposing brass instruments which play from the treble clef are:

**TRUMPET** (or **CORNET**) in **B<sub>b</sub>** or **A**

**FLUGLEHORN** in **B<sub>b</sub>** or **A**

**ALTO HORN** (or **MELLOPHONE**) in **F** or **E<sub>b</sub>**

**FRENCH HORN** in **F** or **E<sub>b</sub>**

The transposing brass instruments which play from the bass clef:

**FRENCH HORN** in **F**

Because of its extreme range, it is sometimes necessary to write the lower notes of the French Horn in the bass clef. Usually, all instruments which play from the bass clef are written for as if they were non-transposing instruments, but the French Horn is an exception to this rule. In former times, F horn parts were written in the bass clef so that they sounded a fourth higher than written.

written:



sounds:

OLD WAY

Today, composers write for the F horn in the bass clef so that it sounds a fifth lower than written, just as it does in the treble clef.

written:



sounds:

NEW WAY

(c) The following percussion instruments are of indefinite pitch:

**SNARE DRUM**

**BASS DRUM**

**CYMBALS**

**TRIANGLE**

## *GONG (TAM-TAM)*

*CASTANETS*

*MARACAS*

*CLAVES*

Snare  
Drum

Cymbals

Bass Drum

In addition to the above instruments, the percussion player is sometimes required to play various "special effect" instruments such as the Rattle, Wind-machine, Anvil, etc.

The following percussion instruments, all played with sticks or mallets, produce musical sounds of *definite pitch*:

## *TIMPANI (KETTLE-DRUMS)*

*BELLS*

*CHIMES*

*GLOCKENSPIEL*

*XYLOPHONE*

*MARIMBA*

*VIBraphone*

Timpani  
in B<sub>b</sub>, F

Bells

(d) Music for keyboard instruments is generally written upon two staves and uses both the treble and the bass clefs. The most important of these instruments are:

## *PIANO (PIANOFORTE)*

*ORGAN*

*CELESTA*

*HARPSICHORD*

*CLAVICHORD*

The *HARP* is actually a stringed instrument but the music for it generally resembles that of the keyboard instruments, in that it uses a pair of staves.

All percussion and keyboard instruments are non-transposing with the exception of the Celesta which sounds an octave higher than written.

The student need not concern himself with unusual or obsolete instruments such as the saxhorn, oboe-d'amore, basset-horn, dulcimer, etc. A more thorough study of all instruments will be undertaken in a course in Instrumentation.

## VOICES

Men's voices are usually divided according to their registers into these groups:

**BASS**—low voices with the music written in the bass clef.

**BARITONE**—medium voices with the music written in the bass clef.

**TENOR**—high voices with the music written in the treble clef, but sounding an octave lower.

Women's and children's voices are divided like this:

**CONTRALTO (ALTO)**—low voices

**MEZZO-SOPRANO**—medium voices

**SOPRANO**—high voices

The music for all women's and children's voices is written in the treble clef.

14. **MELODIC EMBELLISHMENTS**. In the sixteenth and seventeenth centuries, when the principal keyboard instruments were the harpsichord, clavichord, and spinet, composers decorated the melodies for these instruments with various ornaments and unessential embellishments. This was done because these instruments had very little sustaining power. These elaborations made it possible to reiterate certain notes, thereby giving an illusion of sustained tone. Today, authorities differ as to the interpretation of the principal embellishments which are still used.

(a) **GRACE-NOTES**—These are indicated by small notes with a line through the stems, and are usually played quite short and just *before* the principal note. These are sometimes called Acciaccatura.

Written:



Performed:



((b) **APPOGGIATURA** —This is also indicated by a small note but without the line through the stem. It is usually played quite *long* and stands in place of the principal note (i.e., *on* the accented part of the beat).

Written:



Performed:



(c) **SLIDES**—These are an ascending or descending diatonic series of two or more small notes and are played *before* the accented part of the beat.



(d) **MORDENTS**—These are a single, double or triple alternation of a principal note with its upper or lower auxiliary.



Mordents are sometimes indicated by these signs:



(e) **GRUPPETTI or TURNS**—A Gruppetto uses both the upper and the lower auxiliary of the principal note.

Written:

Performed:

(f) **TRILLS**—Trills are made by the rapid alternation of a principal note with its upper auxiliary.

Written:

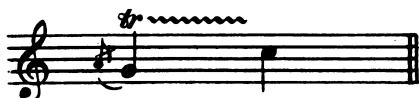


Performed:



If the trill is to begin on the upper note, it should *precede* the principal note as a grace-note.

Written:



Performed:



If the trill is to be made with the lower auxiliary it would also be indicated by a small note *following* the principal note.

Written:



Performed:



Occasionally, for expressive purposes a performer will not perform the trill in a perfectly even manner, but will execute it something like this:



The trill is quite often followed by a turn or gruppetto.

Written:



Performed:



## CHAPTER II

### SCALES

The student will see from the preceding chapter on Notation, that in the alphabetical order of sounds there are seven different pitches, each called by one of the first seven letters of the alphabet. As we said before, the distance between two pairs of these notes (i.e., E — F and B — C) is a half-step; the distance between all the other notes is a whole-step. The space between the notes a whole-step apart can be filled in by the use of accidentals so that instead of the original seven tones, we have actually 12 different pitches.

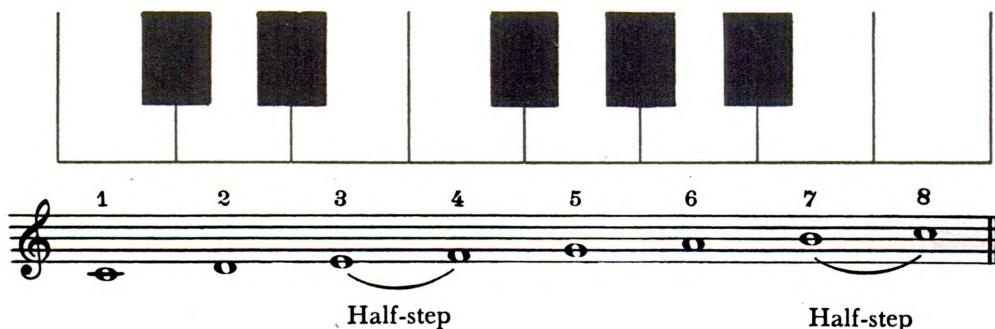


However, in any one particular piece of music all 12 of these pitches will seldom be used. A certain number of tones will generally be chosen from these 12 possible pitches and the composer will use only these selected tones. Theoretically, *any* group of pitches might be selected from those available, and the piece of music written using these. Over a long period of time, however, composers have used two basic groups of tones so frequently that we have given them a name. These groups of tones are called **SCALES**.

These scales may begin on any one of the 12 possible pitches, but they always present the *same arrangement or pattern* of whole-steps and half-steps.

1. **THE MAJOR SCALE**. If we start on any one note designated by a letter of the alphabet, and go up the alphabetical succession of tones, at the eighth step we will arrive at the same letter from which we started. This reappearance of the same letter at a higher or lower pitch produces what is known as an *OCTAVE*.

A **MAJOR SCALE** is a succession of eight notes from any one letter-name to its octave, so arranged that a half-step appears between the 3rd and 4th degrees and also between the 7th and 8th degrees, reckoning upwards; all of the other degrees will be a whole-step apart.



It will be noticed, from the above example, that the white keys of the piano from C to its octave C, form a natural major scale, with the whole-steps and half-steps in the right places.

The major scale may not only begin on C as its keynote, but it may begin on any one of the 12 possible pitches. But when we begin on any other letter-name, using the tones of the natural scale represented by the white keys of the piano, we find that the required order of whole-steps and half-steps is not maintained.

1    2    3    4    5    6    7    8

G                      Half-step                      Half-step

1    2    3    4    5    6    7    8

F                      Half-step                      Half-step

In order to bring the half-steps to their correct positions, it will be necessary to employ alterations or accidentals, represented on the piano by the black keys. For the first example above, the scale beginning on G, it will be necessary to use F sharp as the seventh degree; and, for the scale beginning of F, we will have to have B flat for the fourth degree.

1    2    3    4    5    6    7    8

G

1    2    3    4    5    6    7    8

F

The student should notice from the above examples that the first 4 notes and the last 4 notes, of any major scale, are exactly alike, as far as the arrangement of whole-steps and half-steps is concerned. Each group of 4 notes is made up of two whole-steps and one half-step. A group of 4 successive tones is called a *TETRACHORD*.

So that he may become thoroughly familiar with each key, the student must write out *all* of the scales using each one of the 12 different pitches as the keynote. The method should be something like the following:

1. Write the 8 notes in succession above the keynote which is given; that is, one note for each successive line or space.

1    2    3    4    5    6    7    8

2. Mark a tie where the half-steps *should* appear, i.e., between the 3rd and 4th, and the 7th and 8th steps in the scale.

1    2    3    4    5    6    7    8

All of the other steps in the scale will be whole-steps. In the above example, from B to C is a half-step, so we sharp the C to make a whole-step; C sharp to D is a half-step, add a sharp to D to make a whole-step; D sharp to E is a half-step as it should be; E to F is a half-step, sharp the F to make a whole-step; F sharp to G is a half-step, add a sharp to make a whole-step; G sharp to A is a half-step, add a sharp to make a whole-step; A sharp to B is a half-step as it should be. This produces the B major scale.



This procedure must be carried out carefully for each of the 12 major scales.

To save unnecessary writing, the essential sharps or flats occurring in these scales, are placed at the beginning of a piece of music immediately after the clef sign and on their proper lines or spaces. This arrangement of the accidentals at the beginning of a piece is called the *KEY-SIGNATURE*.

The order in which the sharps occur will be: F, C, G, D, A, E, and B. They are placed on the staff in that order according to the following pattern:



The flats occur in exactly the reverse order, i.e.; B, E, A, D, G, C, and F, and are placed like this:



The student can remember that in flat keys the name of the next to the last flat in the signature will also be the keynote of the scale.



In the sharp keys the keynote will always be the *tone above* the last sharp in the signature.



Here are all of the key signatures with their respective keypoints:

The degrees of the scale have technical names which the student must memorize and use whenever he refers to them.

1st degree	I. <i>TONIC</i>
2nd degree	II. <i>SUPERTONIC</i>
3rd degree	III. <i>MEDIANT</i>
4th degree	IV. <i>SUBDOMINANT</i>

5th degree	V. <i>DOMINANT</i>
6th degree	VI. <i>SUBMEDIANT</i>
7th degree	VII. <i>LEADING-TONE</i>

In addition to these names it should be observed that each tone is represented by a Roman numeral corresponding to its position in the scale.

All of the tones in the major scale (and in the minor scale, which follows) have a greater or lesser degree of importance. The *TONIC* or keynote is the most important of the tones in the scale or key. Next in importance is the *Dominant*, and then the *SUBDOMINANT*. These are known as the *PRINCIPAL* or *PRIMARY TONES*; the *SUPERTONIC*, *SUBMEDIANT*, and *MEDIANT* being the *SUBORDINATE* or *SECONDARY TONES* of the key. The seventh degree of the scale, called the *LEADING-TONE*, is the most *individual* degree of the scale. Its main function is a melodic one; that of leading a melody into the tonic note.

The triads built on the three primary tones of a key, (i.e., the tonic with the dominant located a fifth above it, and the subdominant located a fifth below it), give the scale its feeling of *TONALITY*. This feeling of tonality gives to each degree of a scale a particular melodic and harmonic function. These will be described in detail in a later chapter; it will be sufficient to discuss the general melodic tendencies of the tones here.

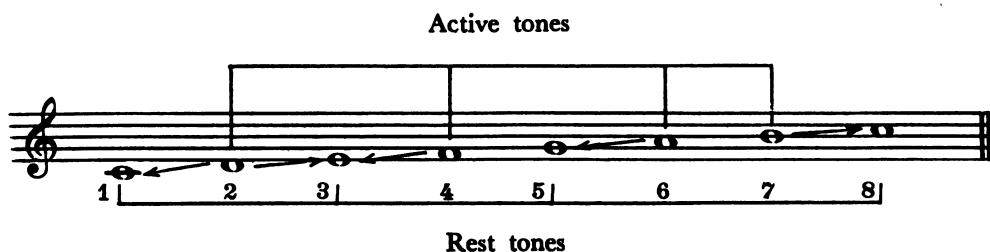
**REST TONES.** The *1st, 3rd, and 5th* degrees of the scale (i.e., the tonic, mediant, and dominant), are relatively inactive, melodically. These tones have a tendency to remain stationary, not to progress to other tones. The reason for this will be explained later when we talk about the overtone series.

**ACTIVE TONES.** The *2nd, 4th, 6th, and 7th* degrees of the scale (i.e., the supertonic, subdominant, submediant, and leading-tone) are very active, melodically. These tones have a tendency to progress to the nearest inactive tone of a scale.

The active tone with the strongest tendency to move is the leading-tone. This 7th degree is separated from the tonic by only a half-step and its strong upward tendency toward the tonic will cause it to be normally resolved to this 8th degree.

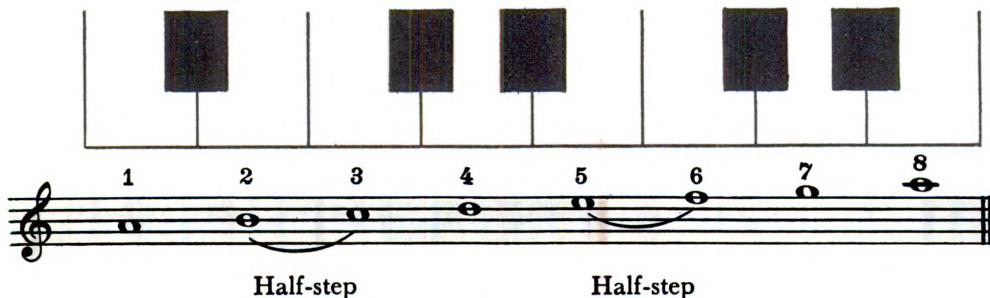
The active tone with the next strongest tendency is the 4th degree. It lies only a half-step above the mediant and should resolve down to this rest tone.

The active tendencies of the 6th and 2nd degrees are not as strong as those of the 7th and the 4th, because these two tones are separated from their nearest rest tone by a whole-step. The 6th degree, then, will normally resolve one step downward to the 5th, and the 2nd degree, lying equidistant between the 1st and 3rd degrees, may resolve to either of these rest tones. However, the 2nd degree will most often move melodically down to the tonic.



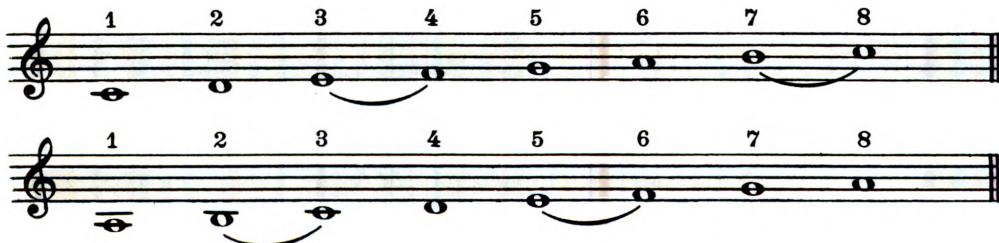
2. **THE MINOR SCALE.** As we said before, there are two arrangements or basic patterns in use to-day which are called scales. The first of these we discussed as the major scale. The minor scale is the next most frequently used arrangement of tones and is constructed in an entirely different way from the major scale, i.e., its pattern of whole-steps and half-steps will be different. Historically speaking, both of these scales are derived from an earlier group of scales called, *MODES*. During the middle ages, and up until the early 17th century, there were several of these modes in use, but within the last 300 years the two modes from which the major and minor scales developed (i.e., the *IONIAN*, and the *AEOLIAN*) have come to be used to the exclusion of the other modes.

**A MINOR SCALE** is a succession of 8 notes from any one letter-name to its octave, so arranged that a half-step appears between the 2nd and 3rd degrees and the 5th and 6th degrees, reckoning upwards; all of the other degrees will be a whole-step apart.



As in the above example, the white keys of the piano from A to its octave A, fulfill the conditions of our definition. This arrangement of tones is called the *NATURAL MINOR*, *PURE MINOR*, or *AEOLIAN MINOR*, to distinguish it from two slightly altered forms of the minor scale which we shall discuss presently.

The natural minor scale of A is related to the major scale of C, in that both use the same key signature, i.e., no sharps or flats.



As was the case with the major scale, the minor scale may begin on any one of our 12 possible pitches. The student should construct *all* of the natural minor scales according to the arrangement of whole-steps and half-steps given in the definition above. To do this he should use the *method* outlined before, for the construction of the major scale.

After this has been done, if the accidentals which are used in the construction of the minor scale are assembled in their proper order, the student will find that he has the same set of key-signatures that he arrived at before in the construction of the major scales. To illustrate:

#### B minor

Same signature  
as D major

#### F minor

Same signature  
as A-flat major

Thus, we see that for each key-signature, we have, not only the major scale, but also the minor scale using the same tones but with its keynote located one and one-half steps below the keynote of the major scale. These pairs of major and minor scales which share the same key-signature are said to be **RELATED**. For example:

E minor is the **RELATIVE MINOR** of G major because they both have the same key-signature (i.e., both contain the same notes) and the tonic of the minor scale is located one and one-half steps below the tonic of the major scale. For the same reason, B flat major is said to be the **RELATIVE MAJOR** of G minor.

The student must write out all of the pairs of related major and minor scales according to the following example:

A musical staff in G major (one sharp) shows two scales side-by-side. The first half of the staff shows the D-flat major scale (D, E-flat, F, G, A, B-flat, C). The second half shows the B-flat minor scale (B-flat, C, D, E-flat, F, G, A). The two scales share the same notes but differ in their starting points and key signatures.

The **REST TONES** in a minor key are the same as those in the major key, e.g., I, III, V. In the major key we saw that the 7th degree, an active tone, had a strong tendency to go to the tonic, because it was separated from this 8th degree by only a half-step. If we look at our pattern for the natural minor scale we see that the 7th degree is a *whole-step* below the tonic. In order to keep this strong active tendency of the 7th degree to go to the 8th degree, it will be necessary for us to raise the 7th degree a half-step, by the use of an accidental. Why the leading-tone needs to have this strong upward tendency, will be more clearly understood when we begin the study of chords. From the example below the student will see that when we raise the 7th degree a half-step we make the distance between the 6th and 7th degrees a step and a half ( $1\frac{1}{2}$ ).

A musical staff in G major (one sharp) illustrates the augmented 2nd interval. It shows a sequence of notes: G (tonic), A (2nd), B-flat (3rd), C (4th), D (5th), E (6th), F-sharp (7th), and G (8th). The interval between the 6th and 7th degrees (E and F-sharp) is labeled "Half-step". The interval between the 5th and 6th degrees (D and E) is labeled "1½ steps".

This distance of one and one-half steps between the 6th degree and the raised 7th degree is called an **AUGMENTED 2nd**.

Using this raised 7th in the minor scale produces a slightly different arrangement of the tones. When the 7th degree of the natural minor scale is raised, the resulting scale is called the **HARMONIC MINOR**. This scale remains the *same* both *ascending*, and *descending*. This is the most common form of the minor scale in use today, and when no *particular* form is specified the harmonic form is the one which is usually intended.

As we mentioned above, from the 6th to the 7th degree in this scale there is a space of one step and a half. This augmented 2nd sounds awkward, and at one time was considered very difficult to sing. If we raise the 6th degree, along with the 7th, we get rid of this awkward interval and produce a very singable approach to the tonic. In fact we see that the last four notes of this minor scale are exactly like the 2nd tetrachord (i.e., four notes) of the major scale. This is called the **MELODIC MINOR SCALE** in its **ASCENDING** form.

In descending from the tonic we do not need any strong *upward* tendency in the leading tone; so, both the 7th and the 6th degrees will revert back to their normal form again. This is called the **MELODIC MINOR SCALE** in its **DESCENDING** form.



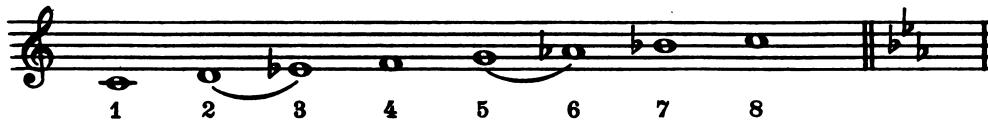
Ascending

Descending

The student should re-read carefully this chapter on the different forms of the minor scale. They are not difficult to remember if they are once thoroughly understood.

To sum this up: there are 3 versions of the minor scale commonly used to-day. They are:

1. The **NATURAL MINOR SCALE**, with the half-steps between 2 and 3, and 5 and 6.



2. The **HARMONIC MINOR SCALE**, formed by raising the 7th degree of the natural minor scale one half-step.



3. The **MELODIC MINOR SCALE**, which, in ascending, is formed by raising both the 6th and 7th degrees of the natural minor scale one half-step, and which, in descending, reverts to the original form of the natural minor scale.



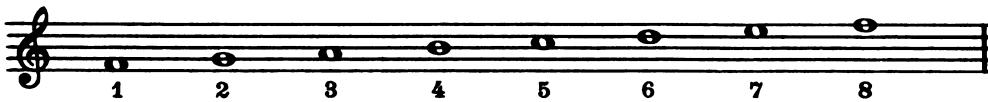
It will be noted that the alterations affecting the 6th and 7th degrees of these minor scales are not part of the key signature; that is, the raising or lowering of these degrees will be done by the use of accidentals.

As we said before, each minor scale has the same signature as some major scale, and therefore is said to be the **RELATIVE MINOR** of that major scale. The minor and major scales which have the same **tonic** are also related (e.g. G MINOR and G MAJOR). G minor is said to be the **TONIC MINOR** or the **PARALLEL MINOR** of G major. The student must clearly understand this distinction. **RELATIVE MINOR** refers to a minor scale which has the same **KEY-SIGNATURE** as some major scale; **TONIC MINOR** refers to a minor scale which has the same **TONIC** as some major scale.

The student will write out all 12 minor scales giving the 3 forms of each, according to this method;

**Natural minor:**

1. Write the 8 notes in succession above the keynote which is given; that is, one note for each successive line or space.



2. Mark a tie where the half-steps *should* appear, i.e., between the 2nd and 3rd, and the 5th and 6th degrees.

3. Fill in the accidentals necessary to make the half-steps come in the right places.

Harmonic minor:

1. Construct in the above manner, a natural minor scale on the given keynote.

2. By means of an accidental, *raise* the 7th degree one half-step.

Melodic minor:

1. Construct, in the above manner, a natural minor scale on the given keynote.

2. For the ascending form, by means of accidentals, *raise* both the 6th and the 7th degrees one half-step. For the descending form, *return* the 6th and 7th degrees, by means of accidentals, to their original place in the natural minor scale.

3. **THE CHROMATIC SCALE.** A chromatic scale is a succession of twelve pitches one half-step apart that extends from one letter-name to its octave. In other words, this scale contains all of the twelve possible pitches within the octave. This chromatic scale is written in all the major and minor keys and it is important that the student learn, and use consistently, a method for its correct notation.

The traditional way of writing chromatic scales, up to the latter part of the nineteenth century, was to employ the notes occurring in the near-related keys. If this is done, in writing an ascending chromatic major scale the sixth degree would *not* be raised, and in the descending chromatic major scale the fifth degree would *not* be lowered.

In writing a chromatic minor scale, according to this reasoning, in the ascending form we would *not* raise the first degree and in the descending form we would *not* lower the eighth, fifth or the fourth degree.

A musical staff in treble clef with a key signature of one sharp. The melody consists of eighth notes. Four specific intervals are highlighted with vertical dotted lines and labeled below the staff: "1st" at the beginning, "8th" after the first two notes, "5th" after the next two notes, and "4th" after the final two notes.

The student will see that, in order to follow this method of notation consistently, the key that the music is written in must, at all times, be clearly defined. With the advent of chromatic harmonies and shifting tonalities, this method of notating the chromatic scale became obsolete. Today, the contemporary composer uses another method of writing chromatics.

**Rule 1.** Write all of the diatonic degrees of the signature in which you happen to be writing. (If, for any reason, the tonality is not clearly defined use the signature for the key of C major.)

**Rule 2.** In ascending, fill in the space between each two diatonic degrees by raising the lower one.

**Rule 3.** In descending, fill in the space between each two diatonic degrees by lowering the upper one.

The above three rules apply to the chromatic form of both a major and a minor scale.

### C major, ascending:

### C major, descending:

### C minor, ascending:

### C minor, descending:

## D $\flat$ major, descending

The student should realize that in actual practice chromatic scales are often notated in the simplest or most convenient way. In the following example the two scales both sound alike and both are notated correctly, but a performer is more likely to find the second one easier to read than the first, because the second scale uses notes with which he is more familiar.

F# major



Gb major



The student should always notate the chromatic scale in the correct way as outlined above, but he should also bear in mind that simplicity of notation assures a more accurate performance. The constant use of a great many double-sharps or double-flats can very often be avoided by a change of key signature.

Eb minor:



Same sound written with signature of Eb major:



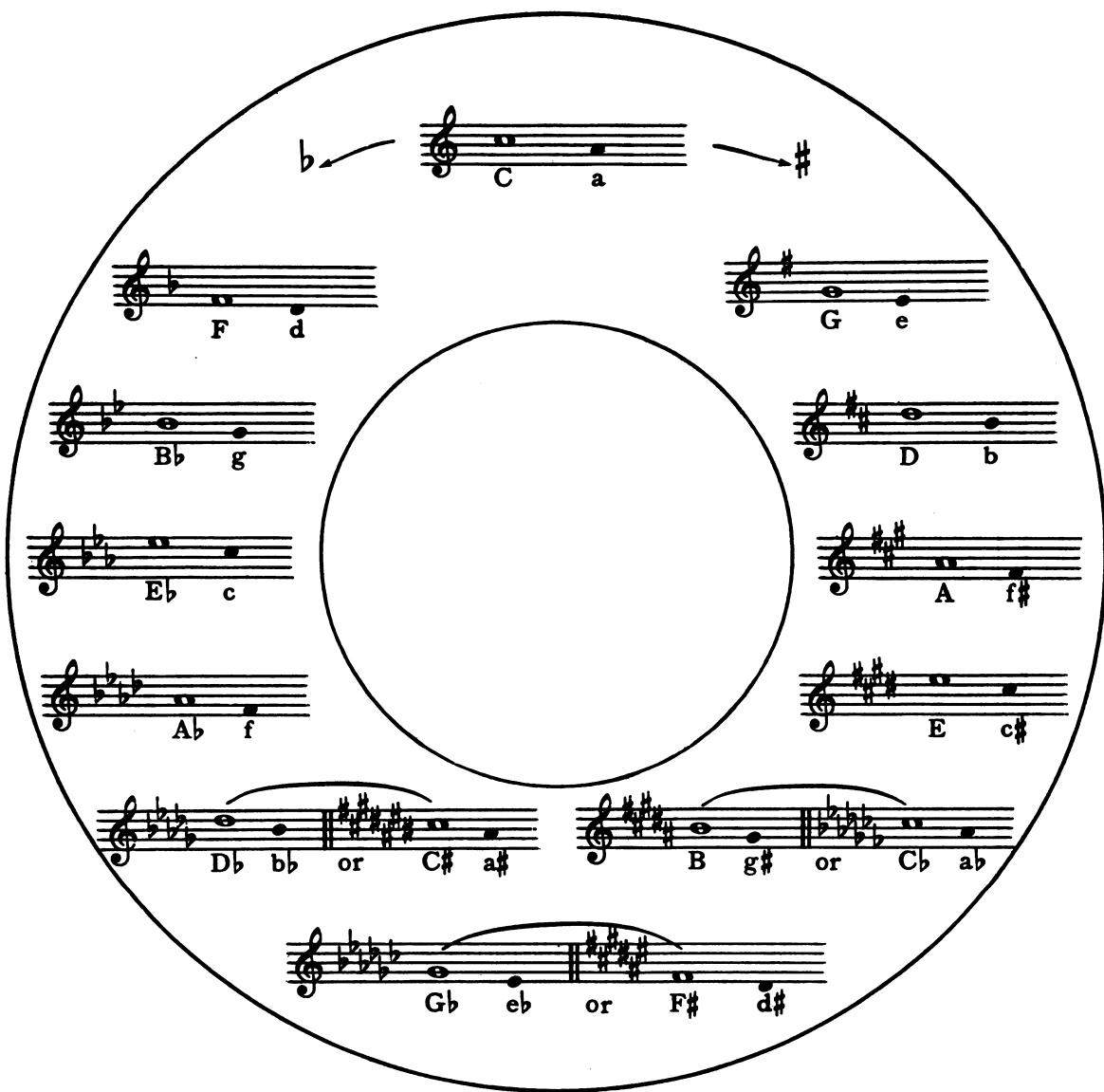
4. **CIRCLE OF KEYS.** The chart below is called the *CIRCLE OF KEYS* or the *CIRCLE OF FIFTHS*. In using this chart, which gives all of the signatures for the different major and minor keys, the student should note, in going around the circle clockwise, the tonic of each sharp key is a fifth (five notes *higher* than the tonic of the preceding key; in going around the circle counter clockwise, the tonic of each flat key is a fifth *lower* than the tonic of the preceding one.

Capital letters indicate the names of the major keys; small letters indicate the minor keys.

The tonic note of the major keys is indicated by a whole note; the tonic of the minor keys, by the head of a quarter-note.

The *ENHARMONIC KEYS* are connected by a line. Two keys, which are enharmonically related, will have the same sound for the corresponding scale degrees, but these corresponding scale degrees will be written differently.

Refer to next page for chart on *CIRCLE OF KEYS*.



### CIRCLE of KEYS

Refer to previous page for explanation of this chart.

# CHAPTER III

## INTERVALS

An *INTERVAL* is the difference in pitch between two musical sounds, or the spacial difference between two notes representing two sounds.

The name of a specific interval is determined by the number of scale-steps (letter-names) included in its formation, including the first and last.

Unison	2nd	3rd	4th	5th	6th	7th	8th

In naming intervals we always count up from the lower of the two tones to the higher. The name is derived, as we said above, from the number of steps which the interval includes. That is, the interval containing two notes is called a *SECOND* (2nd), the interval containing three notes is called a *THIRD* (3rd), etc.

A *PERFECT UNISON*, or *PRIME*, strictly speaking, is not an interval, since this term means two tones of the same name and the same pitch. However, it will be discussed here, and for the purpose of classification, it will be treated like an interval.

**SIMPLE INTERVALS.** All intervals which are an octave or smaller are called simple intervals.

**COMPOUND INTERVALS.** Intervals which are larger than an octave are called compound intervals. These are merely an extension of the simple intervals, i.e., a simple interval plus an octave equals a compound interval. We can speak of these intervals, then, in two ways. We may say that an interval is a "tenth", or we may say that the same interval is an "octave and a third".

10th                    9th                    13th  
8va & 3rd            8va & 2nd            8va & 6th

Intervals are usually divided into 2 classifications: *CONSONANCE* and *DISSONANCE*.

A *CONSONANT INTERVAL* is a combination of two sounds which in itself produces a complete and satisfactory effect.

A *DISSONANT INTERVAL* is one which produces an impression of incompleteness or instability, and usually requires that some consonant interval follow it for a completely satisfying effect:

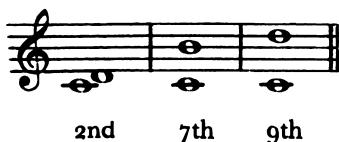
There are two further classifications of consonant intervals. They are termed, either *PERFECT*, or *IMPERFECT* consonances. The *PERFECT CONSONANCES* are the *UNISON*, *4th*, *5th*, and *OCTAVE*. Any alteration of these perfect intervals, by means of an accidental, produces a dissonance.



The *IMPERFECT CONSONANCES* are the *3rd*, and *6th*.



The *DISSONANT INTERVALS* are the *2nd*, *7th*, and their compound extensions.



Besides having a numerical name, intervals are also qualified by other terms.

For all dissonances and imperfect consonances:

*DIMINISHED, MINOR, MAJOR, AUGMENTED.*

For all perfect consonances:

*DIMINISHED, PERFECT, AUGMENTED.*

All diminished and augmented intervals are considered dissonant, i.e., when we diminish or augment a consonance, it becomes a dissonance.

We will try to make these qualifications clear by giving some specific examples.

If we place an accidental before one or both notes of an interval, we do not change its numerical name, but we may change the quality of the interval.



Each of the above intervals is a 3rd, but its quality, or the kind of 3rd that it is, is determined by the number of semitones it contains. A major 3rd contains four half-steps, a minor 3rd three half-steps, and augmented 3rd five half-steps, and a diminished 3rd contains two half-steps.

These qualifying terms are applied to intervals in the following way:

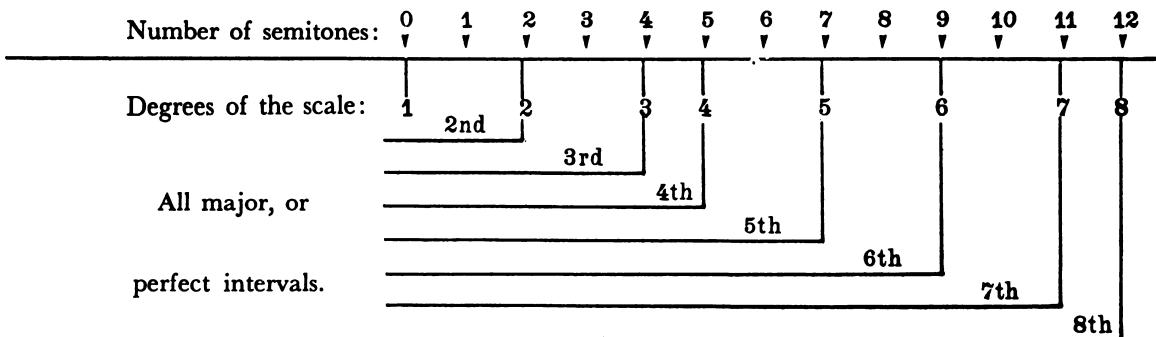
Unisons, 4ths, 5ths, and octaves will be *perfect* diminished or augmented.

2nds, 3rds, 6ths, and 7ths will be *major*, *minor*, diminished or augmented.

We use the major scale as a basis for determining the quality of intervals. All of the intervals from the tonic to any of the notes of a major scale will be either major or perfect.



Another way of determining the quality of an interval will be by the number of semitones that it contains, according to the following diagram:



A major 2nd contains two semitones, a major 3rd four semitones, a perfect 4th five semitones, a perfect 5th seven semitones, a major 6th nine semitones, a major 7th eleven semitones, and the perfect octave contains 12.

We fill in the vacant spaces in the above table by the terms minor, diminished and augmented:

1. Minor is *one semitone less* than major.
  2. Diminished is *one semitone less* than minor or perfect.
  3. Augmented is *one semitone more* than major or perfect.

In applying this to a given interval it is best to imagine the lower note of the interval as the tonic of its major scale. Next, we must know the numerical name of the interval, i.e., 3rd, 6th, etc. Then, if the top note of the interval occurs in the major scale of the bottom note, we know that it will be either major or perfect, i.e., a major 2nd, 3rd, 6th, or 7th, or a perfect 4th, 5th, or octave. If the top note is not in the major scale of which the bottom note is tonic, we will have to determine its quality by applying the 3 rules just given above. for example:

The image shows three staves of music on a single treble clef staff. Staff (a) has a note on the second line. Staff (b) has a note on the third line. Staff (c) has a note on the fourth line.

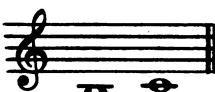
- (a) From C up to A is a 6th, and A occurs in the major scale of C; so, we know that the interval is a *major sixth*.
  - (b) From C up a A sharp is also a 6th, but a sharp raises a note one semitone, and according to the rules just given, when a major interval is increased one semitone it becomes augmented. This interval, then, is an *augmented 6th*.
  - (c) From C sharp up to B flat is a 7th, but the seventh degree of a major scale on C sharp, would be B sharp. From C sharp to B sharp would be a major 7th. If we lower the B sharp one half-tone to B natural, we would have a minor 7th. If we further lower this B natural one half-tone, we get B flat, and the minor 7th becomes a *diminished 7th*.

All of the simple intervals can be *INVERTED* by changing the relative position of the two notes; i.e., by putting the *lower* note *up* an octave, or by putting the *higher* note *down* an octave.

To find the *INVERSION* of an interval, we subtract its numerical description from *nine*, i.e., 2 from 9 equals 7 (a 2nd inverted will be a 7th). This gives us the numerical name of the inversion, but in order to name its quality, we use the opposite of the quality of the original interval:

Major	intervals inverted become minor.
Minor	intervals inverted become major.
Diminished	intervals inverted become augmented.
Augmented	intervals inverted become diminished.
(Perfect	intervals inverted remain perfect).

A *DIATONIC SEMITONE* is formed by two adjacent tones belonging to the same major or natural minor scale, but having *different names* and *different pitch*.



A *CHROMATIC SEMITONE* is formed by two adjacent tones *not* belonging to the same major or natural minor scale, and having the *same name* but *different pitch*.



A *DIATONIC INTERVAL* is one which will occur in a diatonic major scale or the relative natural minor.



A *CHROMATIC INTERVAL* is one which cannot be formed from the material of the diatonic major scale or its relative natural minor, e.g. the diminished 3rd, the augmented 6th, etc.



We will give an example below of two intervals that the student should know about in theory; they will seldom be used in practice. While the perfect unison is not considered an interval, the augmented or diminished unison is, because it represents a difference in pitch.

An augmented unison inverted, becomes a diminished octave.

A diminished unison inverted, becomes an augmented octave.



When two tones are sounded in succession, one after another, they form, what is called a *MELODIC* interval.



When two tones are sounded simultaneously, they form, what is called, a *HARMONIC* interval.

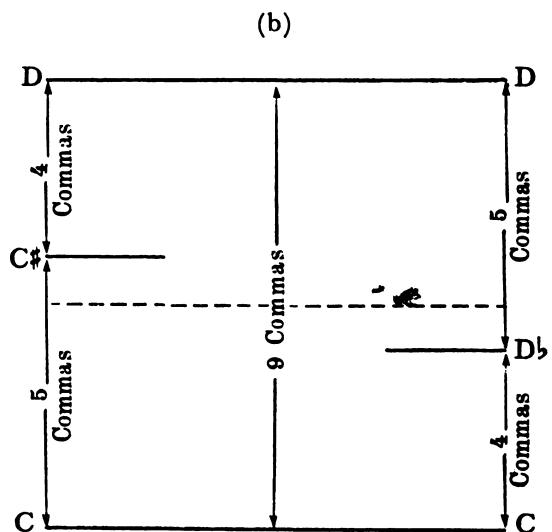
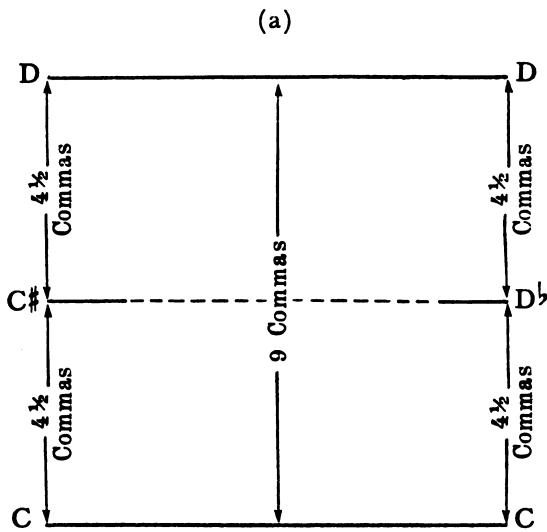


Today, music is written in what is called the *TEMPERED SCALE*. In the past there were various systems of tuning devised such as, "pure tuning", "mean-tone tuning", etc. For a detailed study of these methods of tuning, the student is referred to any standard work on acoustics; for our purpose here it will be sufficient to say that the tempered scale represents a kind of compromise between the other systems.

The smallest discrepancy in pitch which the normal ear can ordinarily distinguish is about one-ninth of a whole-tone. This difference is called a *COMMA*.

Obviously, on a keyboard instrument such as the piano, the whole-tone will be divided into two *equal* half-tones, since the space between two white keys is filled by only one black key. Therefore, on a keyboard instrument, the whole-tone containing nine commas will be divided into two equal half-tones, each containing four and one-half commas. (a)

In the case of the human voice, and certain instruments such as the strings, there is no fixed division of the whole-tone. On these instruments a *diatonic* half-tone contains *four* commas, a *chromatic* half-tone contains *five* commas. (b)



# CHAPTER IV

## TRANSPOSITION

It is sometimes necessary to write, read, or perform a piece of music in a key other than that in which it was originally written. This process, of reproducing a piece of music at a different pitch, is called **TRANSPOSITION**.

1. **BY CLEF.** We explained earlier that a clef is a device for indicating some five-line portion of the Great Staff: that is, by means of clefs we can actually change the letter-names of the lines and spaces of the five-line staff. We will illustrate how this is done by means of an example:

The following piece of music is to be transposed a major third higher than written.



1. We arrive at the tonic of the new key and its proper signature, in this case, the key of D major with its signature of two sharps.



2. We find the clef which will give the proper letter-name to the notes originally written in the key of B-flat.



3. We make whatever changes are necessary in the accidentals used. In this case, the two accidentals used (naturals) *raised* the pitch of the notes following them, so in the new key we must use accidentals (sharps) which will also *raise* the degrees of the new key.



Here is another example. We will transpose this melody a perfect fourth lower. A perfect fourth lower than A major, is E major with its signature of four sharps. The Tenor clef will be used because this gives us E on the fifth line. In transposing by clef we do not consider the correct *octave* for the new key, only the correct letter-names of the notes. The first accidental used (natural) *lowers* the tone following it; all of the other accidentals (sharps) *raise* the succeeding tones.



The system of transposing by clef is the *most* useful system of transposition, providing the student reads all of the clefs *fluently*. It is the *least* useful if he reads these clefs with difficulty.

2. **BY INTERVAL.** When the difference between the old and the new key is small, i.e., a third or less, it is sometimes easier to transpose by thinking of the interval relationship of the two keys. The following melody is to be read one whole-tone higher than written.

The student, then, thinks something like this:

One whole-tone higher than A $\flat$  is B $\flat$

" " " " " G " A  
" " " " " F " G  
" " " " " E " F $\sharp$   
" " " " " F " G  
" " " " " D $\flat$  " E $\flat$   
" " " " " C " D  
" " " " " A " B  
" " " " " B $\flat$  " C

In transposing by this method it is necessary to be extremely careful as far as accidentals are concerned since the *exact* interval difference must be maintained at all times. In practice, the student will find it more practical to use this system in combination with the following one.

3. **BY SCALE-DEGREE.** In using this method of transposition the student relates the different degrees of the scale to a tonic by means of numbers. Here is an example:

1. The following melody, written in the key of C major, is to be transposed to the key of A $\flat$  major. We first get the signature of the new key clearly in mind, in this case the signature of A $\flat$  major (4 flats)

2. The melody begins on the fifth degree of the scale (dominant) and goes to the first (tonic). In the key of C major this is G up to C; in the key of A $\flat$  major this is E $\flat$  up to A $\flat$ . Here are all of the scale degrees in the original key.

3. Then we substitute notes in the key of A $\flat$  major for these scale degrees.

For the inexperienced student it is easier to transpose by a combination of interval and scale-degree methods. He will read a piece of music at the required interval but he will keep in mind the new signature and relate each tone to the tonic of the new key.

4. **BY CHANGE OF SIGNATURE.** When the transposition is one half-step higher or lower this can sometimes be accomplished by mentally changing the key signature. For example, this melody has to be played one half-step lower than written.



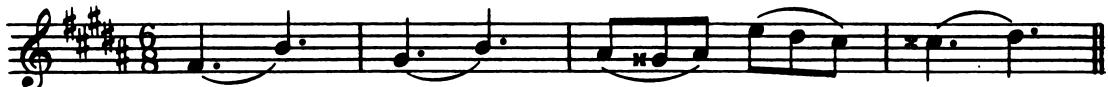
This is easily done by imagining the signature of G<sub>b</sub> major and playing the same written notes.



To transpose one half-step higher the following melody in the key of B<sub>b</sub> major, we would use the signature of B major.



One half-step higher



In transposing by any of the above methods the student may at first have difficulty whenever he encounters accidentals. He must first analyze *what* the original accidental did in the old key (whether it *raised* or *lowered* a note), and then duplicate this in the new key. The *same kind* of accidental may not always be used in both keys but the *operation* of the accidental must always be the same.

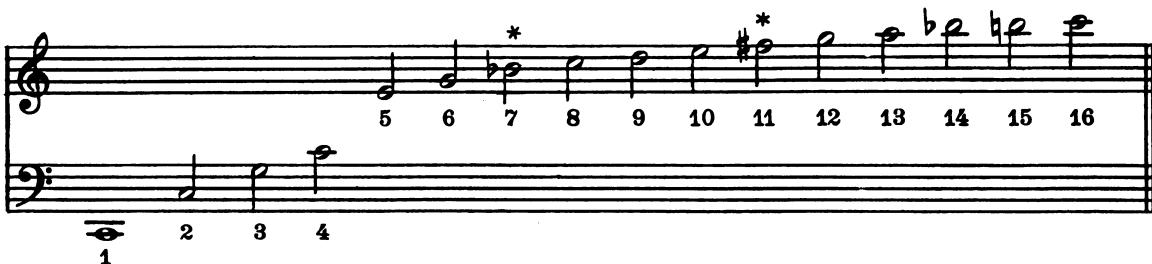
# CHAPTER V

## CONSTRUCTION OF TRIADS

1. **TRIADS IN THE MAJOR KEY.** Each musical sound, which we think of as a single tone, is in reality a collection of many sounds. The lowest of these sounds is called the *FUNDAMENTAL*, or *GENERATING-TONE* and the various sounds which occur above it, are called its *OVERTONES* or *HARMONICS*. This fundamental is the strongest of all the tones sounding, and from it we derive the *pitch* and *name* of the particular musical sound. The intensity of the other sounds in the *OVERTONE SERIES* diminishes as the sounds get farther away from the fundamental. In other words, the higher we go in the overtone series, the weaker the sounds and the less effect they will have on the total, composite sound.

The relative strength of different ones of these higher overtones, gives each sound its particular *TIMBRE*, or *TONE-QUALITY*.

Below is an example of this overtone series from the generating tone C. The student must understand that this series is present whenever *any* fundamental note is struck, i.e., this series may be transposed so that it occurs above any one of the 12 different pitches. As we said above, the last part of the series is very weak, in fact, it is scarcely audible, and so we will be more concerned with the fundamental and the first 4 or 5 overtones.



(Fundamental)

\*These tones are not in tune according to our tempered system of tuning.

The strongest overtone is the octave, and next, in order of importance, are the intervals of the 12th, 15th, and 17th (the 3rd, 4th and 5th tones in the series). When we reduce these compound intervals to simple ones, we have the notes C, E, and G. These three notes, placed one above the other, form the *MAJOR TRIAD*. From this we form our pattern for the triad. A *TRIAD* is a chord of 3 notes built of two superimposed 3rds.

In a *MAJOR TRIAD* the first 3rd is major, the second minor. The *MINOR TRIAD* is an inversion of this, the first 3rd being minor, the second major.

Minor Triad



Major Triad

When *both* the superimposed 3rds are major an *AUGMENTED TRIAD* is formed. The opposite of this, two superimposed minor 3rds, produce a *DIMINISHED TRIAD*.



### Diminished Triad

By writing the diatonic 3rd and 5th above each degree of a scale, we produce all of the triads contained in that key.



The lowest note in a triad is called the *ROOT*; the middle tone is called the *THIRD*, because it is a 3rd above the root; the highest note is called the *FIFTH*, because it is a 5th above the root. In the major triad there is a *MAJOR* 3rd between the root and the third of the chord, and a *PERFECT* 5th between the root and the fifth.

In the above example, we see that I, IV, and V are all *MAJOR TRIADS*.

Minor triads contain a *MINOR* 3rd between the root and the third of the chord, and a *PERFECT* 5th between the root and the fifth.

In our above example, we see that II, III, and VI will be *MINOR TRIADS*.

This takes care of all of the diatonic triads in the major key, with the exception of VII. This triad, built on the leading tone, is made up of two superimposed minor 3rds, as we said before. These two minor 3rds produce a *DIMINISHED* 5th between the root and the fifth of the triad. For this reason, this is called a *DIMINISHED TRIAD*.

All of the diatonic triads, in a major key, with the exception of VII, are *COMMON CHORDS*, i.e., they are chords which are common to more than one key. VII is a dissonant triad, common only to a key and its relative natural minor.



In a major key we may classify the chords in the following way:

### MAJOR TRIADS

I, IV, V

### MINOR TRIADS

II, III, VI

### DIMINISHED TRIAD

VII

The student should notice that in a major key the triads built upon the primary tones of the scale are all **MAJOR** triads, i.e., I, IV, and V. These are called the **PRIMARY TRIADS** of the key. Also, in a major key the **SECONDARY TRIADS** (i.e., those triads built upon the secondary tones of the key) will always be **MINOR TRIADS**, i.e., II, III, and VI.

A musical staff in G clef. It shows the notes for the primary triads (I, IV, V) as major chords (triads) and the secondary triads (II, III, VI) as minor chords (triads). The notes are: I (C-E-G), IV (F-A-C), V (G-B-D), II (D-F-A), III (E-G-B), and VI (A-C-E).

Primary Triads	Secondary Triads
I IV V	II III VI

2. **TRIADS IN THE MINOR KEY.** If we build triads on each of the scale steps of the key of A minor, we have the following chords:

A musical staff in G clef. It shows the notes for the triads in A minor: I (A-C-E), II (B-D-F), III (C-E-G), IV (D-F-A), V (E-G-B), VI (F-A-C), and VII (G-B-D). The notes are: I (A-C-E), II (B-D-F), III (C-E-G), IV (D-F-A), V (E-G-B), VI (F-A-C), and VII (G-B-D).

These are exactly the same triads which we had in C major (the relative major of A minor), but in this case I, IV, and V are **MINOR TRIADS**, II is a **DIMINISHED TRIAD**, and III, VI, and VII are **MAJOR TRIADS**.

We can say then, that in a **MAJOR** key all of the **PRIMARY TRIADS** will be **MAJOR**, and in the **NATURAL MINOR** key all of the **PRIMARY TRIADS** will be **MINOR**.

Our table of triads for the **NATURAL MINOR SCALE** will look like this:

MAJOR TRIADS	MINOR TRIADS	DIMINISHED TRIAD
III, VI, VII	I, IV, V	II

Next, we will construct triads using the harmonic minor scale.

A musical staff in G clef. It shows the notes for the triads in harmonic minor: I (A-C-E), II (B-D-F), III (C-E-G sharp), IV (D-F-A), V (E-G-B), VI (F-A-C), and VII (G-B-D). The notes are: I (A-C-E), II (B-D-F), III (C-E-G sharp), IV (D-F-A), V (E-G-B), VI (F-A-C), and VII (G-B-D).

The raising of the 7th degree produces a new chord and makes a reclassification of the other chords necessary. III, in the above example contains the notes C, E, G sharp. It is built, then, of a **MAJOR** 3rd, and an **AUGMENTED** 5th. This is called an **AUGMENTED TRIAD**.

With the raised 7th, we also find, that V becomes a major triad, and VII becomes a diminished triad, as it was in the major key.

The table of triads for the **HARMONIC MINOR SCALE** is:

MAJOR TRIADS	MINOR TRIADS
V, VI	I, IV
DIMINISHED TRIADS	AUGMENTED TRIADS
II, VII	III

Just as the harmonic minor scale is the most frequently used, this arrangement of chords in the minor key will most frequently occur. However, we must have another table showing the kind of chords that occur when the melodic minor scale is used. The *DESCENDING* form of the melodic minor scale is the same as the natural minor scale, so the same triads would occur in both. The *ASCENDING MELODIC MINOR SCALE*, with the raised 6th and 7th degrees gives us these triads.

MAJOR TRIADS

IV, V

MINOR TRIADS

I, II

DIMINISHED TRIADS

VI, VII

AUGMENTED TRIADS

III

The 3 forms of the minor scale make possible a choice between two different versions of some of the triads, depending upon which one of the minor scales we are using at the time.

We will make a table, based upon the harmonic minor scale, but showing all of the possible triads found in this and the other two forms of the minor scale.



MAJOR TRIADS

V, VI

(III) (VII) (IV)

DIMINISHED TRIADS

II, VII

(VI)

MINOR TRIADS

I, IV

(V) (II)

AUGMENTED TRIADS

III

# CHAPTER VI

## ELEMENTARY USE OF TRIADS

1. **PRELIMINARY DEFINITIONS.** In the previous chapters the student has been learning the various symbols, musical terms, and theories from which music is constructed. The study, from here on, will concern the *use* of this material. If he has learned these fundamentals well, their application and use will not be difficult.

**HARMONY** is the study of the succession of vertical combinations of different pitches. A combination of three or more different pitches, sounded simultaneously, is called a **CHORD**. A **MELODY**, **LINE**, or **PART** is a horizontal succession of single musical sounds sung, or played by an instrument.

**HARMONIC PROGRESSION** is the simultaneous motion of all parts in chord formation.

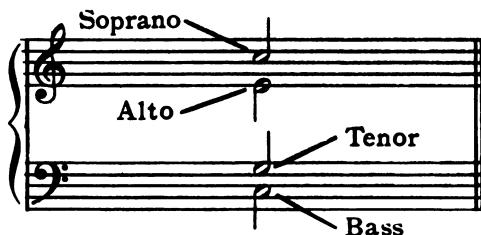
**MELODIC PROGRESSION** is the succession of melody tones in one single line or part.

Our study of harmony will be concerned with both the harmonic progression, and the melodic progression of sounds. That is, we will consider the writing of music from both the vertical and the horizontal viewpoint; not only giving our attention to chord construction and succession, but also emphasizing the **MELODIC-LINE** of each particular voice or part. Both the art of melody-writing and the art of chord-building are governed by certain axioms which we shall call rules. The student must never forget that these rules or laws, concerning the writing of music, are derived from an analysis of music itself. The master composer writes a piece of music from which the theorist, by analysis and study, deduces certain truths. These things, which are found to be true of the majority of music, are formulated into more-or-less dogmatic rules for teaching purposes, and must be followed closely by the student while he is learning the art of music-writing.

Our harmony or part-writing exercises will be written for the four voice parts: soprano, alto, tenor, and bass. The compass for each voice should not exceed:



These four voices will be written in the treble and bass clefs in this order: the soprano will have the highest note in the chord; the alto will have the next lower part, these two parts being written in the treble clef; the tenor will have the next lower part than the alto; and the bass will have the lowest part, the tenor and the bass being written in the bass clef.



2. **CHORD-WRITING.** For the present we will restrict ourselves to the use of the primary triads, I, IV, and V, of the major key.

Since a triad contains only 3 notes, and we use four separate parts, one of the notes in the triad will have to be doubled. It is best, in most cases, to double the *ROOT* of the primary triads. If this is impossible, because of some difficulty in voice-leading, the next best note to double is the 5th. Occasionally the root may be tripled and the 5th omitted.

For the present, the root of the chord will always appear in the bass, while any one of the three notes can appear in the soprano. We may write the tonic chord of the key of C Major these three ways:

A musical staff with a treble clef and a bass clef. It shows three different ways to write the tonic chord (C major). The first way has the root (C) in the bass, the 3rd (E) in the soprano, and the 5th (G) doubled in the alto. The second way has the root (C) in the bass, the 3rd (E) doubled in the soprano, and the 5th (G) in the alto. The third way has the root (C) in the bass, the 5th (G) in the soprano, and the 3rd (E) doubled in the alto. The labels '3rd', '5th', and 'Root' are above the staff, and 'Root' is below each of the three chords.

When the three upper voices are written within the limits of an octave, the harmony is said to be in *CLOSE POSITION*, regardless of whether the bass note be near or far removed from the others. When the distance between the three upper voices exceeds an octave, the harmony is said to be in *OPEN POSITION*.

A musical staff with a treble clef and a bass clef. It compares two ways of writing a chord. The left side, labeled 'Close position', shows a C major chord where the soprano (C), alto (E), and tenor (G) are all within an octave. The right side, labeled 'Open position', shows the same chord where the soprano (C), alto (G), and tenor (E) are spread across more than an octave. The labels 'Close position' and 'Open position' are centered below their respective examples.

The student should bear in mind that, other things being equal, it is better for smaller intervals to occur between upper voices, and larger intervals to occur between lower voices. The distance between the soprano and the alto, and the alto and the tenor, should rarely exceed an octave, but it is quite common to have more than an octave between the tenor and the bass.

A musical staff with a treble clef and a bass clef. It shows five pairs of soprano and alto entries. The first two pairs are labeled 'Good', the third is 'Acceptable', and the last two are 'Bad'. The 'Bad' examples likely represent poor intervallic choices between the two voices. The labels 'Good', 'Good', 'Acceptable', 'Bad', and 'Bad' are centered below the corresponding pairs.

The student must now write out the three primary triads (I, IV, and V) of each of the 12 major keys, using each member of the triad as the soprano note. He may use both open and close position, but must take care that the root of the chord always be in the bass. Here are the primary triads of the key of C Major:

I                    IV                    V

3. **PART-WRITING.** So far, we have written *isolated* chords in root-position. Obviously, when we write two chords in *succession* we must be concerned with the movement of the separate parts, i.e., part-writing.

The motions of parts in different directions have the following names:

**CONTRARY MOTION:** parts moving in the opposite direction.

**OBLIQUE MOTION:** one part remaining stationary, while the others move.

**SIMILAR MOTION:** parts moving in the same direction.

Contrary                    Oblique                    Similar

Contrary or oblique motion, especially between outer parts, is generally preferable to similar motion.

Contrary                    Oblique                    Similar

When two parts move in *octaves* or *unisons*, the extra weight of the added voice gives undue prominence to the movement. This also reduces the number of parts available, destroying the effect of four-part harmony. The same thing is true, to a slightly lesser degree, in the case of consecutive *fifths*. Of course, the composer may use these consecutives to give prominence to a particular phrase, or in order to create a special effect, but these special uses will be out of place in a student's exercise.

No two parts may move in *consecutive octaves, unisons, or fifths*.

All Bad:



When two parts move in the *same direction* to an octave or fifth, they produce an effect somewhat similar to consecutive octaves or fifths. These are sometimes called *HIDDEN OCTAVES* or *FIFTHS*, or *COVERED OCTAVES* or *FIFTHS*.

8vas                    5ths

Bad                    Bad

Hidden octaves or fifths are permissible: (a) between the two outer parts when the *top part* moves *by step*, (b) between an outer and an inner part when either part moves *by step*, (c) between two positions of the same chord.

(a)                    (b)                    (c)

Good                    Good                    Good

Hidden octaves or fifths are *not* objectionable when they occur between the inner parts.

Also, the student should *not approach or leave a unison in any two adjacent parts by similar motion*.



In playing or analyzing the Bach Chorales, the student will notice that the parts frequently cross one another.



This is done for a particular reason and is very effective for voices, but at this time the student is *forbidden* the use of *crossed parts*.

Somewhat similar to this is the case of parts which *overlap*:



No voice or part is permitted to move to a note higher than the note sounded in the *previous* chord by the adjacent upper voice, or lower than the note sounded in the *previous* chord by the adjacent lower voice.

4. **CHORD SUCCESSION.** Now we will apply the rules of part-writing and the things which we did in chord-writing to the occurrence of two chords in succession. We will still use only I, IV, and V in their root position.

For the present the student will write his chord connection according to these rules:

- The bass will move from the *root* of the first chord to the *root* of the second.
- If there is a note in one of the upper three parts which is *common* to both chords, this note will be kept in the *same voice*, the other two voices moving to the *nearest* notes belonging to the second chord.
- If there are no notes common to both chords, the three upper parts will move to the nearest chord notes in *contrary motion* with the bass.

In the following example the leading-tone is not in the soprano but occurs in an inner voice.



As we have explained before, the leading-tone has a strong tendency to resolve upward to the tonic. In an *inner* part the melodic tendency of this tone is not *always* important. In the example above the student will notice that the upward resolution of the leading-tone results in tripling the root, and omitting the 5th in the final chord. In order to have the final chord complete, occasionally the leading-tone may fall to the 5th of this chord instead of progressing upward to the root.



While the student may *occasionally* resolve the leading-tone in this manner he will *most often* resolve the tone according to its upward tendency.

5. **CADENCES.** At the end of every musical phrase there is a chord progression which produces a feeling of either *finality* or *suspense*. These points of repose are called **CADENCES**. They are the most important part of a musical phrase since they make the feeling of tonality clear; they give the musical phrase the proper inflection (i.e., one of finality or suspense); and, because they act as rhythmic punctuation, they give form to the musical phrase.

There are several different kinds of cadences, each having a name. With the chords, which we are using (I, IV, and V), we can write the three most important cadences.

The **PERFECT** or **FULL CADENCE** consists of the dominant chord followed by the tonic chord. This cadence gives finality to a phrase, occurring at the end of a piece or at the end of some important section of a piece of music.

These things should be observed: (a) that the leading tone rises to the tonic, (b) the common note remains in the same voice, (c) the bass has the root of both chords, (d) the fifth of the first chord, while it might go one step down or up, goes up to the third in order to complete the second chord.



The **IMPERFECT** or **HALF CADENCE** consists of the tonic, subdominant, or some other chord followed by the dominant chord. This cadence, while giving a temporary feeling of repose, implies a state of suspense. That is, while it momentarily interrupts the musical phrase, it gives no feeling of finality but implies that something else will follow. This cadence usually occurs as an intermediate cadence in a phrase or group of phrases.



The **PLAGAL CADENCE** consists of the subdominant chord followed by the tonic. This cadence is often used after a perfect cadence to confirm or emphasize the finality of a phrase. The student will be familiar with this cadence from its use at the end of hymns, as the "Amen".



The student must now write out the three cadences, perfect, imperfect, and plagal, for all of the 12 Major keys, remembering to keep all of the chords in root position and govern the motion of the other three parts by the rules we gave under section 4, on *CHORD SUCCESSION*. These can be written in both open and close position with different notes of the triads in the soprano.

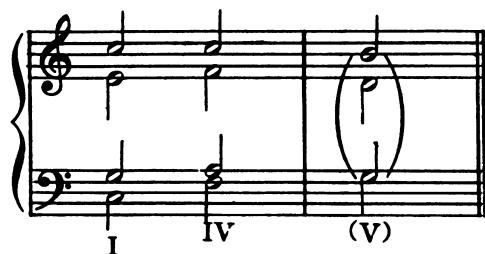
Full	Half	Plagal

The student will notice that we have used the progressions, I — V, IV — V, V — I, IV — I. There are two other progressions possible: V — IV, and I — IV. The progression V — IV is *not* good when both chords are in root position, as we are using them here. The student will find the example below very harsh and "backward". This progression seems to accentuate the awkward *TRITONE*, or Augmented 4th, which occurs between the leading-tone and the fourth degree of the scale.

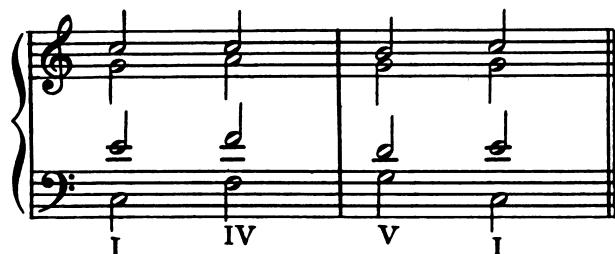
Bad



The progression I — IV, while not forming a cadence, is a very common and useful one. The subdominant chord quite often appears as a connecting link between the tonic and the dominant chords.

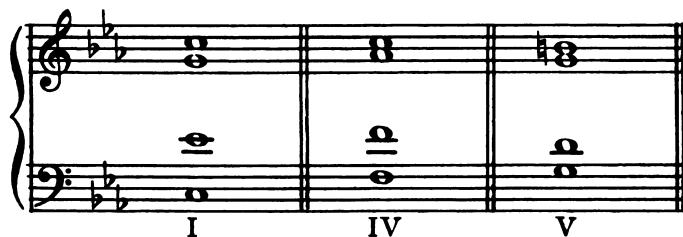


With these three chords we can form one of the most basic harmonic patterns in music. This is the progression I — IV — V — I.

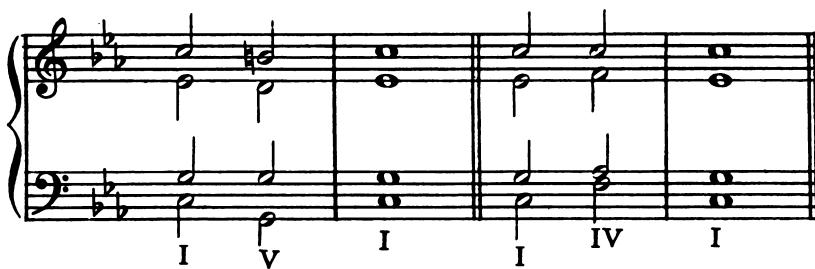


The student should write, and play on the keyboard, this progression, in root and close position, in all of the possible major keys.

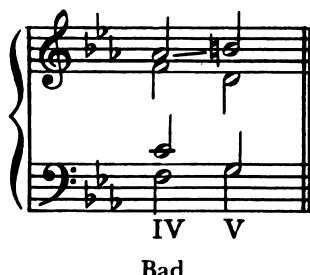
6. *THE USE OF TRIADS IN THE MINOR KEY.* All of the observations which we have made concerning chord-writing, part-writing, chord succession and cadences for the primary triads in the major key, are equally true for the use of the primary triads in the minor key. In order to make the perfect cadence in minor more emphatic and final, we use the raised 7th degree, i.e., the *harmonic* minor scale. This means, that while the subdominant and tonic chords are minor, the dominant chord in a minor key will be a major chord. The student must remember that it is always necessary to write-in this raised leading-tone by means of an accidental.



The progressions I — V, V — I, I — IV, and IV — I, will cause the student no difficulty since they are exactly the same in minor as they were in major, except that the 3rd of the dominant chord (leading-tone) will always be raised by means of an accidental.



The progression IV — V will require care in handling. The *melodic* interval from the 6th degree to the raised 7th degree of the *harmonic* minor scale, must not occur, at this time, in any *one part* or voice.



Bad

If the student will take care to have the three upper voices move *down* to the next nearest chord note in contrary motion to the bass this awkward interval of the augmented 2nd will not occur melodically



Good

As was done before with the major keys, the student should now write out the perfect cadence, imperfect cadence and plagal cadence for all of the 12 minor keys. Different members of the triad should appear in the soprano voice and both open and close positions should be used. Here are the three cadences in the key of C Minor.

Full              Half              Plagal

Finally, the student must write out, and play on the piano, the basic harmonic pattern I — IV — V — I in all of the minor keys.

# CHAPTER VII

## PRINCIPLES OF FORM

In the chapter just before this, the student became familiar with the rules of part-writing and chord succession and applied these to the primary triads in cadences. Now we will attempt to use this material in harmonizing a simple musical phrase.



If we play the above melody, we notice that it naturally falls into two sections, in this case each section being four measures in length. These natural divisions or sections are called *PHRASES*, and in common ( $\frac{4}{4}$ ) time each regular phrase is, ordinarily, four measures long. When we put two of these phrases together, as in the above example, we have a *PERIOD*. Two related periods form a *DOUBLE-PERIOD*. These double-periods can also be combined so as to form a still longer section of music; in fact, the process can be continued for a considerable time until we arrive at musical compositions of considerable length. This aspect of the construction of music, that of its "architectural structure", is called *FORM*. The study of form constitutes a branch of musical investigation in itself. We will only be concerned here with the smaller forms, such as the phrase, the period and the double-period, but in working with these small forms, we will show certain basic principles which will also be true for the larger forms which the student will study at a later time.

The first phrase in this example begins with an incomplete measure, i.e., it begins on the 4th beat. This "pick-up" or "up-beat" is called the *ANACRUSIS*. A phrase which begins on the 1st beat of a measure, on the "down-beat", is said to have a *THETIC* beginning. These words are derived from the terms, *ARSIS* and *THEISIS*, which, in poetry, refer to the weak and strong accents of a line.

The first phrase of our example ends on the 3rd beat of a measure, i.e., the last note in the phrase does *not* coincide with the beginning of the last measure of the phrase. This is called a *FEMININE* ending. When the last note of a phrase *does* coincide with the beginning of the last measure, it is called a *MASCULINE* ending.

We said in the chapter on cadences that the cadence came at the end of a phrase. The kind of cadence which will be used at the end of each phrase will be suggested by the melody itself. When we play our example over, we find at the end of the first phrase that there is a feeling of incompleteness or suspense, as if there was something to follow; the end of the second phrase suggests just the opposite, i.e., the feeling of completeness or finality. The ends of these phrases, then, will be harmonized with the half-cadence and the full-cadence respectively, which we studied before.

Since the first note of the first phrase is the tonic of our key, it is reasonable to assume that we will harmonize this note with the tonic chord. We will see as we go along, that melody and form both imply harmony.

Here is the melody and the harmony which it implies:

The image displays two staves of musical notation. The top staff begins with a treble clef, a key signature of one flat, and common time. It starts on the note C (Tonic I), followed by a series of eighth notes. A bracket above the staff indicates a melodic line from the start to the end of the staff. The end of this line is labeled 'I - V Half-cadence'. The bottom staff continues the melody, starting on D (V) and ending on C (I), indicated by a bracket and the label 'V - I Full-cadence'.

We know the correct chords for the beginning and ending of the phrases; we now have to harmonize the notes which come in between with appropriate chords.

# CHAPTER VIII

## PRIMARY TRIADS

1. *PRIMARY TRIADS IN ROOT POSITION.* As we said above, a melody, to a great extent, will give an indication of the harmony which should accompany it.

The notes in the first full measure are A, C, A, and F. These all belong to the tonic chord, i.e., F, A, C. We know from our exercises in chord-building that any member of the triad can appear in the soprano, so we can harmonize this entire first measure with the tonic chord like this:

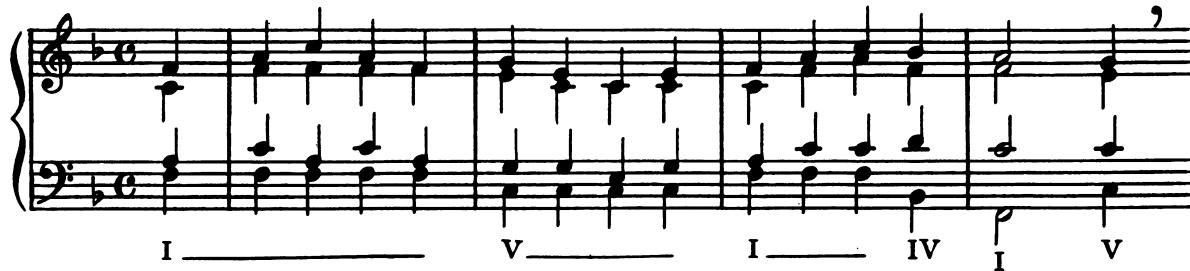


The second measure contains the notes G, E, C and E, and these are members of the dominant triad C, E, G. This measure will be harmonized with the dominant chord.



In the third measure the notes are F, A, C, and B flat. For the F, A, and C we can again use the tonic triad. The B flat does not belong to this triad so we will have to use another chord of which it is a member. B flat is the fourth degree of the scale, so we can harmonize it with the sub-dominant chord.

For the fourth measure we have said already that the harmony will be I—V, making a half-cadence. The entire first phrase will be harmonized, using the primary triads I, IV, and V in root position, something like this:



The last beat of the fourth measure is the anacrusis to the last phrase and it and the fifth measure will all be harmonized by the tonic chord as we did above.

The G in the sixth measure is a member of the dominant chord with which it will be harmonized. The next note, F, can be a member of either the tonic chord, or the subdominant chord. We know that the progression V to IV is awkward, so we will harmonize this note with the tonic chord.

The last two notes in the sixth measure are D and B flat; these will have to be harmonized with the subdominant chord.



In the seventh measure the first two notes belong to the tonic chord, and the last two notes to the dominant chord. This agrees with the harmony which we know will be necessary to make a full-cadence at the end of a phrase. The entire period of two phrases will be harmonized completely like this:

The connection of the chords in an example like we just gave, must be governed by the rules of chord succession which the student has already studied. He must now do a considerable number of exercises, i.e., harmonizing given melodies using only the principal triads in root position, and paying particular attention to the cadences. To facilitate the selection of chords that will harmonize the notes of a melody, we will make a table showing the harmonic possibilities of each member of the diatonic scale.

Scale degree:	1	2	3	4	5	6	7
Harmonized by:	I	V	I	IV	V	IV	V
	IV			I			

The student has a choice in harmonizing the 1st and the 5th degrees of the scale and his choice will depend upon the chords before and after the one in question. The above table is as true for the minor key as it is for the major.

The teacher will give the student numerous melodies, *in both* the major and the minor key, which can be harmonized with the primary triads in root position. He will work these in the manner outlined above, and in sufficient number to acquire some facility in using this harmonic material.

2. *PRIMARY TRIADS IN 1st INVERSION.* If we place the root of a triad an octave higher, in the same way that we inverted intervals, the triad is said to be inverted. We call this the *1st INVERSION* to distinguish it from subsequent inversions which we will study later. As in the example below, this inversion makes the *THIRD* of the chord the bass note.

The image shows two sets of musical staves. The top set, labeled 'Major', has a treble clef and consists of three notes on a staff: a bass note (A), a middle note (D), and a top note (F#). Below the staff are Roman numerals I, IV, and V. The bottom set, labeled 'Minor', also has a treble clef and shows the same three notes (A, D, F#) in the same positions. Below the staff are Roman numerals I, IV, and V.

In order to distinguish the 1st inversion from the root position and other inversions, it is necessary to have some symbols which indicate the chord position. These symbols have developed into a system called *FIGURED BASS*. The figures refer to the intervals which occur above a given bass note, i.e., a triad in root position would be figured,  $V_3^5$ , meaning that a 5th and a 3rd are sounding above the bass note, in this case the root of the dominant triad. The 1st inversion is figured  $IV_3^6$  and means that an interval of a 6th and an interval of a 3rd will be sounded above the bass note.

A diagram showing two pairs of bass notes on a staff. The first pair is followed by the text "5 means [5/3]" and the second pair is followed by "6 means [6/3]". The numbers 5 and 6 are enclosed in brackets above the staff, indicating the intervals above the bass note.

For the sake of convenience the  $\frac{5}{3}$  is omitted in referring to a chord in root position, i.e., when no figure accompanies a bass note or chord symbol (IV) it is understood that the chord is in root position. For a similar reason a 1st inversion is commonly called a 6 chord, the 3 being omitted.

Root Position	1st Inversion
	6

1st inversions are used, in connection with chords in root position, in order to give more variety to the bass line. Instead of having only three possible bass notes for the triads I, IV, and V, we now have six.

The primary triads in the Major key are all Major chords and the 1st inversion requires no new rules for doubling. That is, the root of the chord will be doubled most frequently; the 5th of the chord will be doubled occasionally; and sometimes the root will be tripled, the 5th being omitted. The 3rd in the major chord will rarely be doubled except for reasons of voice-leading, and these exceptions will not occur in the elementary exercises which the student is writing now.

The I and IV of the Minor key are Minor chords, and quite frequently will have the 3rd doubled.

The use of the 1st inversion requires no new rules for part-writing.

The student will fill in the inner parts for the soprano and bass given below, being careful to use the 1st inversion when this is indicated by the number, 6. (Copy this exercise out on paper; *DO NOT WRITE IN THIS BOOK*).

1. V — IV is good when either chord is an *inversion*.
2. These consecutive octaves by *contrary motion* are usable.

The instructor will supply the student with various *melodies* and *figured basses* using primary chords in root position and 1st inversion.

3. **PRIMARY TRIADS IN 2nd INVERSION.** If we take a chord in 1st inversion and invert it once again (i.e., put the 3rd, which is in the bass, an octave higher) the chord is said to be in **2nd INVERSION**. This puts the 5th of the chord in the bass.

The image shows two musical staves. The top staff is labeled "Major" and the bottom staff is labeled "Minor". Both staves have a treble clef and four horizontal lines. The notes are arranged in groups of three, representing chords. In the Major staff, the first group has a note on the top line, a note on the middle line, and a note on the bottom line. The second group has a note on the middle line, a note on the bottom line, and a note on the top line. The third group has a note on the top line, a note on the middle line, and a note on the bottom line. Below each group are Roman numerals I, IV, and V. In the Minor staff, the first group has a note on the top line, a note on the middle line, and a note on the bottom line. The second group has a note on the middle line, a note on the bottom line, and a note on the top line. The third group has a note on the top line, a note on the middle line, and a note on the bottom line. Below each group are Roman numerals I, IV, and V.

This is the most unstable, and consequently the *least frequent*, of all inversions. Chords will frequently appear in root position; those in 1st inversion, while not quite as common as chords in root position, still occur quite often; while the 2nd inversion will occur very *rarely* and will be used for a specific purpose.

The three most common uses of the six-four chord are listed below; the student will use the chord, for the present, in these three ways *only*. This is a very important and useful chord for the particular purposes to which it is put, but it will not occur more than once or twice in an exercise of average length.

**CADENTIAL SIX-FOUR CHORD.** This is the most common use of the 2nd inversion. It occurs, as in the example, when a tonic chord in the 2nd inversion is followed by a dominant chord in root position, on the same bass note. Metrically, this kind of six-four chord will occur on the *strong beat* of a measure and may be used to precede the dominant chord in either the half-cadence or the full-cadence.

Half-Cadence in Major

A musical staff with a treble clef and four horizontal lines. The first measure shows a six-four chord (I<sub>6</sub>) with notes on the top, middle, and bottom lines. The second measure shows a dominant chord (V) with notes on the top, middle, and bottom lines. A vertical bar line separates the measures. Below the staff are Roman numerals I<sub>6</sub> and V.

Full-Cadence in Minor

A musical staff with a treble clef and four horizontal lines. The first measure shows a six-four chord (I<sub>6</sub>) with notes on the top, middle, and bottom lines. The second measure shows a dominant chord (V<sub>b</sub>) with notes on the top, middle, and bottom lines. The third measure shows a tonic chord (I) with notes on the top, middle, and bottom lines. A vertical bar line separates the first two measures, and another vertical bar line separates the second and third measures. Below the staff are Roman numerals I<sub>6</sub>, V<sub>b</sub>, and I. The word "or" is placed between the first and second measures.

**AUXILIARY SIX-FOUR CHORD.** When the 3rd and 5th of a chord in root position move up one scale-step to their upper adjacent notes, and then return, the bass note remaining the same, an auxiliary six-four chord is produced. This type differs from the cadential six-four, in that it occurs on the *weak-beat* of the measure. It may occur, as in the first example, over the dominant tone or it may occur as a subdominant six-four chord over the tonic note.

V       $I_6$   
4

I       $IV_6$   
4

**PASSING SIX-FOUR CHORD.** This chord occurs between the root position and 1st inversion statements of a chord. We will use only two; the 2nd inversion of the dominant chord between the root position and 1st inversion of the tonic chord; and the 2nd inversion of the tonic chord between the two statements of the subdominant chord. The bass note is approached and left *by step*. The student should notice that in *all* types of the six-four chord the *bass note*, being the least active, is the note which is *doubled*.

I       $V_6$   
4

IV       $I_6$   
4

$IV_6$

Mention should be made of what is sometimes called the **ARPEGGIO SIX-FOUR CHORD**. This chord really has no identity of its own; it comes about when the bass outlines a chord, the upper parts being sustained. The bass note will move from the 5th of the chord, to the root or 3rd of the same chord, or move to the bass note of another chord *by step*.

I       $I_6$   
4

$I_6$   
4

IV

I       $I_6$   
4

$I_6$   
4

IV

The instructor will give the student various short exercises, similar to those which follow, in which the different types of the 2nd inversion may be used.

Work and figure the following exercises using, in each case, the kind of six-four chord indicated at the place the asterisk occurs.

Cadential six-four chord:

A musical staff in G major (one sharp) and common time. It consists of two measures. The first measure has a bass note C and a soprano note E. The second measure has a bass note C and a soprano note G. An asterisk (\*) is placed above the second measure, indicating the position for figuring the six-four chord.

Auxiliary six-four chord:

A musical staff in A minor (no sharps or flats) and common time. It consists of four measures. The first measure has a bass note F# and a soprano note A. The second measure has a bass note F# and a soprano note C. The third measure has a bass note G and a soprano note C. The fourth measure has a bass note G and a soprano note E. An asterisk (\*) is placed above the third measure, indicating the position for figuring the six-four chord.

Passing six-four chord:

A musical staff in D major (one sharp) and common time. It consists of four measures. The first measure has a bass note A and a soprano note C. The second measure has a bass note A and a soprano note E. The third measure has a bass note G and a soprano note E. The fourth measure has a bass note G and a soprano note G. Below the staff, Roman numerals indicate harmonic progressions:  $\frac{\sharp}{4}$ , 6, 6,  $\frac{\sharp}{4}$ . An asterisk (\*) is placed above the second measure, indicating the position for figuring the six-four chord.

# CHAPTER IX

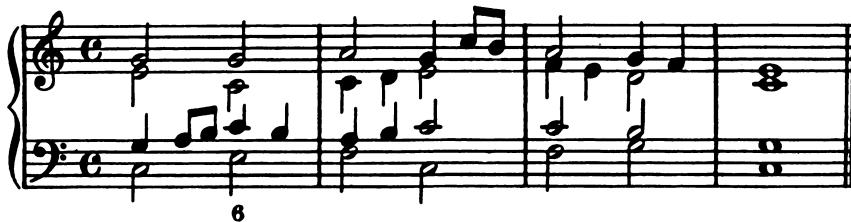
## PASSING-NOTES AND AUXILIARIES

So far our study of harmony has been concerned only with consonance, the triads built on the primary degrees of the scale containing no dissonant intervals. The student knows from experience that no music written in the last 500 years has been wholly consonant. It would be ridiculous for us to continue our study of chords and make no mention of the unessential notes which decorate them; the student would find himself writing purely academic exercises that would have no meaning, musically. Even the simplest hymn-tune contains certain notes which are not chord members.

The devices which we are about to study in this chapter are melodic ones, i.e., we will begin to give some attention to the melodic movement of the separate voices. The study of separate melodies sounding simultaneously is called *COUNTERPOINT*. Practically all music makes use of *both* harmonic and contrapuntal material.

**PASSING-NOTES.** Tones which fill in the space between two different chord-notes are called passing-notes. The space or interval between the two harmonic tones will be either a 3rd or 4th for *DIATONIC* passing notes, or a Major 2nd for a *CHROMATIC* passing note. The passing tone itself is *unessential* to the harmony and so may be *dissonant* with it; for this reason, it must be approached and left by step. Some theorists refer to "accented" and "unaccented" passing-notes, but here we will use only the passing-note which comes on the *weak-beat* of the measure. The accented dissonance, approached and left by step, will be studied later as an appoggiatura. The passing-note may occur in any voice and may be used either ascending or descending.

Diatonic passing-notes:



A musical score for two voices (treble and bass) in common time (indicated by 'c'). The key signature is B-flat major (two flats). The score consists of four measures. In the first measure, a passing note (a half note) appears above the bass note D. In the second measure, a passing note (a half note) appears above the bass note G. In the third measure, a passing note (a half note) appears above the bass note C. In the fourth measure, a passing note (a half note) appears above the bass note F. The bass part provides harmonic support with sustained notes and occasional passing notes. Two asterisks (\*) are placed below the bass staff under the notes in the third and fourth measures, indicating chromatic passing notes.

\* = Chromatic passing note

o = Diatonic passing note

Chord progressions which are incorrect without passing-notes remain incorrect with them:



Combinations which are correct may be made incorrect by the use of passing-notes:

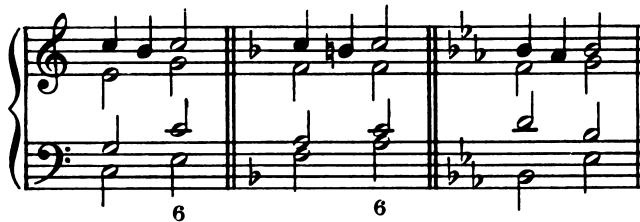
Good                      Bad

**AUXILIARY NOTES.** The tone next *above* or *below* a harmonic tone is called an auxiliary note. This note always stands *between* two statements of the harmonic tone, and occurs on the weak beat of the measure. These auxiliary notes are sometimes called upper or lower *NEIGHBORING TONES*.



The upper auxiliary is always *diatonic* within the key, i.e., it may be a whole-step or a half-step according to the key signature.

The lower auxiliary may be either *diatonic* or *chromatic*. Most often the lower auxiliary is a *semitone*, either diatonic or chromatic, below the harmonic tone; but occasionally we find a lower auxiliary a whole-step below the essential note.

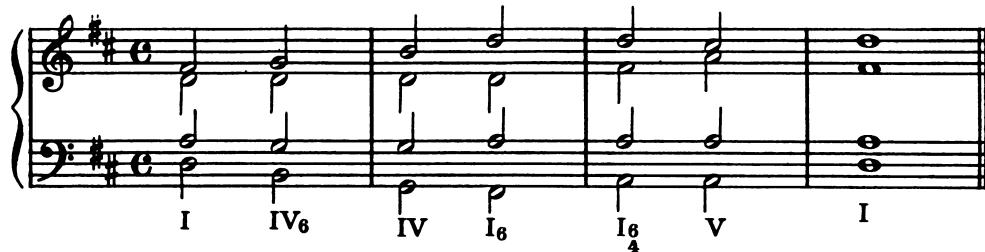


Sometimes the upper and lower auxiliaries are used together; the leap of a 3rd up or down from one dissonant note to another being allowed if preceded and followed by the harmonic tone.



\*When the upper or lower auxiliary comes on the *strong* beat as here, the device is more properly called an appoggiatura. These will be discussed in detail under that heading.

Below is a harmony exercise which we will decorate by means of passing-notes and auxiliaries.



Here is the same exercise after the unessential notes have been added. The student will see when he plays these two exercises that the second one is much more musical than the first, although both contain essentially the same harmony.

In working the exercises which the instructor will give him, the student should first decide on the harmony that is necessary and then add these contrapuntal devices as a means of decoration.



# CHAPTER X

## THE DOMINANT SEVENTH CHORD

1. **ROOT POSITION.** If the student will notice the exercises given above containing passing-notes, he will see that there is one kind of passing-note which occurs frequently and always with good effect e.g.:



This passing note above the dominant chord in a full cadence occurred so often that composers finally made it a part of the chord itself. This was done by adding another third above the dominant chord; the chord was called the V<sup>7</sup> chord because the added note was a seventh above the root.

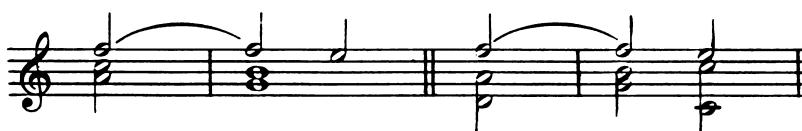


When we test this interval of a seventh at the piano we find that it is dissonant, and dissonant intervals have to be followed by consonant intervals in order to produce a satisfactory effect; therefore we can make this rule:

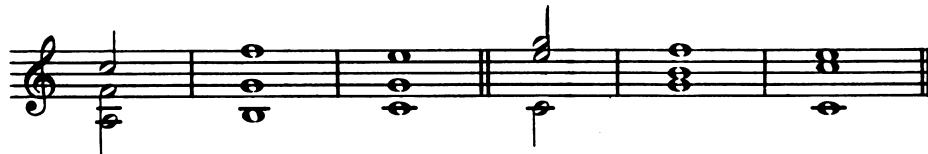
The seventh above the dominant chord can be used providing it resolves *one step downward* into the following chord. Since we are using only I, IV, and V, this will mean that for the present, the V<sup>7</sup> chord will be followed by the tonic chord, the seventh of the dominant chord resolving to the third of the tonic chord by step.



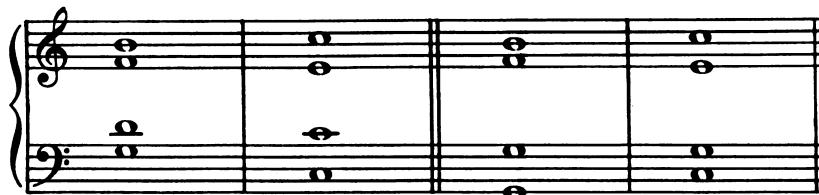
Originally this seventh, like all other dissonances occurring on the strong beat, had to be prepared as a consonance in the previous chord; this preparation was tied over to become a dissonance and then resolved downward by step.



Constant use has made the chord familiar and we no longer prepare the dissonance; it may be approached either by step or skip.



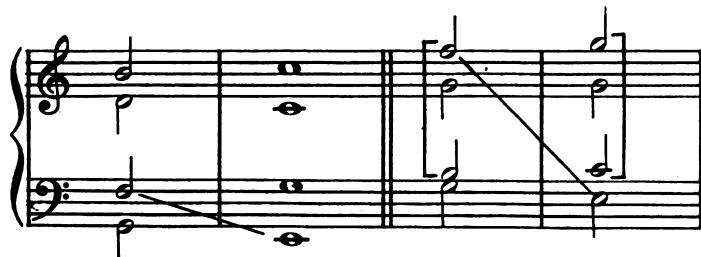
There are four notes in the complete dominant seventh chord; all four may be used in four part writing or, the 5th may be omitted and the root doubled.



The resolution of the seventh may be ornamented by auxiliary notes; this is very much like the use of both the upper and lower neighboring notes which we have already described.



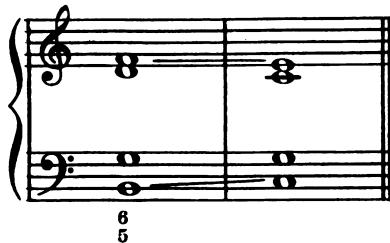
There is one irregular resolution of the V<sup>7</sup> chord which we will discuss at this time; the bass may take the note of resolution, the seventh moving up one step to the next chord note. The diminished fifth followed by the perfect fifth is allowed.



The student will use this V<sup>7</sup> chord in the final cadences of his exercises, the seventh making the cadence stronger and more emphatic.

6

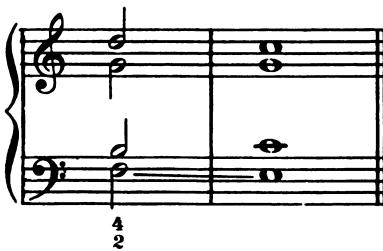
2. **INVERSIONS.** The first inversion of the dominant seventh chord is referred to as  $V_3^5$ , but usually the 3 is omitted as we said before, and it may be called a "dominant six-five chord". Usually all of the tones are present in an inversion of the dominant seventh chord. In the 1st inversion it is quite common to have the 7th in the soprano; it and the 3rd of the chord in the bass resolve inward to the 3rd and root of the tonic chord. Except for the necessity of resolving the 7th, this chord is treated like any other 1st inversion.



The 2nd inversion ( $V_3^4$ <sup>6</sup>), commonly called the "dominant four-three chord", is used most frequently as a passing chord. It will occur between the root position and 1st inversion of the tonic chord on the weak accent. The 7th resolves normally, except when the bass takes the note of resolution; then it moves up by step.



With a four note chord, a 3rd inversion is possible; the seventh occurring in the bass. The dissonant note is more prominent in the bass and consequently more demanding of a resolution; therefore, when the seventh appears in the bass it *must* be resolved one step downward in the same voice. The chord is figured  $V_2^4$ , but is usually called a "dominant four-two chord".



Before going on to any new material, the student should do a *great* number of exercises using the material just covered, i.e., the primary triads and their inversions; passing-tones and auxiliaries; and the dominant seventh chord and its inversions.

# CHAPTER XI

## SECONDARY TRIADS

1. *IN THE MAJOR KEY.* So far we have dealt with only the triads built upon the primary scale steps, I, IV, and V; the triads built upon the secondary scale steps, while not quite as important as the primary triads, are very useful and necessary in giving variety to our harmonizations.

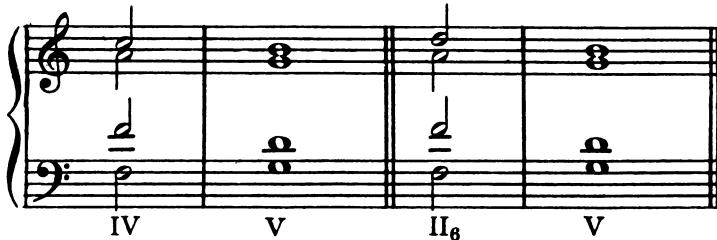
In the major key triads built upon II, III, and VI are all minor triads, that is, they are composed of tones a minor 3rd and a perfect 5th above the root. These triads, like the primary ones, are all consonant. The triad built upon VII is a diminished triad, that is, it is made up of a minor 3rd and a diminished 5th; and is therefore, *dissonant*. Because of its dissonant character, VII will not be used in root position, but will be discussed later as an inversion. The other secondary triads will be discussed according to their functions and uses.

The root of the *SUPERTONIC* triad stands in a dominant relation to the dominant chord (V), i.e., the root of II is a perfect 4th below the root of V. As this indicates, the principle use of the supertonic triad will be as an *approach* to the dominant harmony. It is good, and occurs quite commonly in this connection in *both* root position and 1st inversion; the 2nd inversion will be used only as a passing chord between the root position and 1st inversion of the dominant harmony.

In the progression II — V when both chords are in root position, the three upper voices usually drop down to the next nearest chord note, as in the example below; this is done instead of continuing the common tone in the same voice as we have done heretofore.



In an approach to the cadence, the II in 1st inversion is used as a substitute for the subdominant chord in root position (which has the same bass note). In fact, the II<sub>6</sub> sounds very much like the subdominant chord with one of the notes misplaced; this similarity will be even more noticeable when we study the II<sup>7</sup>.



The *MEDIANT* triad is the weakest and consequently the least used chord in the major key. This is probably because the chord's function is ambiguous; it contains two notes which are common to the dominant chord, and two notes which are common to the tonic chord; thus, it can, in some instances, be substituted for *either* of these two chords. Its use in *root position* as a substitute for the dominant chord seems weak and ineffectual and need not be considered here. The two most common uses of the root-position are in progressions: III — VI, where the root of III is a perfect 4th below the root of VI; and III — IV, where it functions somewhat like the 1st inversion of I (or I<sup>7</sup>).

In its 1st inversion the III will generally sound like a dominant chord, the root of III sounding like some sort of decoration of the 5th of the dominant chord. Its use in this connection, while not as strong or emphatic as the V, is still common. The 2nd inversion will practically never be used, being the weakest position of the weakest chord in the major key.

The *SUBMEDIANT* triad contains two notes which are common to the tonic chord, and is often used in its place at a cadence when a feeling of finality is to be avoided. The progression V — VI is called the *DECEPTIVE CADENCE*, because the approach is exactly like that of a full cadence except that, for the last chord, VI is used instead of I. In this progression, when both chords are in root position, the leading-tone normally ascends to the tonic in parallel thirds with the bass, causing the 3rd of VI to be doubled.

Full Cadence	Deceptive Cadence

II quite often follows VI because the root of VI is a perfect 4th below the root of II; the progression VI — II — V — I being very common. The 1st inversion is comparatively rare but is treated in the usual way, the 3rd most often being doubled; the 2nd inversion will occur scarcely at all.

The diminished triad built on the 7th degree of the major scale contains the top three notes of the V' chord, and in most cases it is treated as a V chord with the root omitted. While the two chords are not exactly the same, it is reasonable to make this substitution, at least in the beginning, since both chords have the same general function, i.e., to make a strong cadence to the tonic.

When the leading-tone chord is used in root position, the dissonant interval of the diminished 5th occurs between one of the upper voices and the bass. This dissonance is so harsh that the chord is seldom used in root position except in the course of a sequence. A *SEQUENCE* is a repetition of a pattern on different scale-steps. As long as the original pattern is correct, any irregularities which appear in its sequence are justified.

Pattern              Sequence              Sequence

VII

*etc.*

When the VII triad is in 1st inversion the two upper voices form a minor 3rd and a major 6th with the bass; these intervals are consonant. This is the way the VII triad will be used most of the time, and the student will always use it in 1st inversion except when it occurs in a sequence as above.

The 3rd of the chord, being the least active, will be doubled; the leading-tone and the 5th of the chord will resolve inward or outward to the root and 3rd of the tonic chord.

VII<sub>6</sub>              I

The 2nd inversion is not very effective since the 3rd inversion of the complete dominant 7th chord (i.e., with the 7th of the chord in the bass) produces the same general effect and is a much stronger and a more stable sound.

Better

VII<sub>4</sub>/₄              I<sub>6</sub>              V⁴/₂              I<sub>6</sub>

The VII<sub>6</sub> can be used in place of the dominant 7th chord in practically all cadences except the final one; there, for a complete and satisfactory ending it is better to have the complete dominant followed by the tonic, both chords being in root position.

2. *IV THE MINOR KEY.* The *SUPERTONIC* triad in the minor key is usually a diminished chord, that is, it is composed of a minor 3rd and a diminished 5th. In root position, like the VII triad, the II in minor is dissonant, and for this reason the root position of the chord will not occur as frequently as the 1st inversion. However, where the VII triad is used scarcely at all in root position, composers have used the II in root position occasionally as an approach to V. The II in root position in the minor key is more satisfactory than the VII in root position in the major key, probably because the 2nd degree of the scale is less active melodically than the 7th, and is therefore better as a generating tone for a triad. While the II, then, may *occasionally* be used in root position, it will most often occur in 1st inversion.

In minor, as in major, the II is very much like the IV and occasionally it may be used in the 2nd inversion as in the example below. Here, it is difficult to tell whether this is a II chord in 2nd inversion with a passing note C, or the 1st inversion of the IV chord with the D as an appoggiatura. The student, in his writing, should restrict himself to the use of the II chord in 1st inversion, but occasionally in analysis he may run into something similar to this.

When the 6th degree of the minor scale is raised as a melodic approach to the raised 7th, it may be harmonized by the supertonic triad; when this occurs, the II becomes a minor chord.

A musical staff in G minor (two flats) with a treble clef and a common time signature. It contains four measures. Measure 1: Bass note G, Treble note E. Measure 2: Bass note A, Treble note F-sharp. Measure 3: Bass note B, Treble note G. Measure 4: Bass note C, Treble note E. Below the staff, the Roman numerals I, II<sub>6</sub>, V<sup>7</sup>, and I are written under their respective measures.

The *SUBMEDIA NT* triad in the minor key is a major chord. It is used in the same way as the VI in the major key and is particularly effective in the deceptive cadence as a substitute for I. In the progression V — VI we will double the 3rd in VI, as we did before.

A musical staff in G minor (two flats) with a treble clef and a common time signature. It contains two measures. Measure 1: Bass note E, Treble note C-sharp. Measure 2: Bass note G, Treble note B. Below the staff, the Roman numerals V<sup>7</sup> and VI are written under their respective measures.

When the raised 6th degree appears in the melodic minor scale, the VI triad will be diminished. As in the case of the other diminished triads which we have studied (i.e., VII and II), this chord will be used most frequently in 1st inversion.

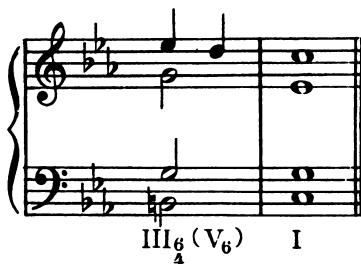
The triad on the *MEDIA NT* in the minor key will be an *augmented* triad when the raised 7th degree of the scale is used. Unlike the III in major, this augmented triad in minor is a very strong and colorful chord. It is composed of a major 3rd and an augmented 5th. Used in root position it has somewhat the same function as a dominant chord, but is not very final or emphatic. In this position it will be most often followed by VI.

A musical staff in G minor (two flats) with a treble clef and a common time signature. It contains two measures. Measure 1: Bass note B, Treble note G-sharp. Measure 2: Bass note D, Treble note C. Below the staff, the Roman numerals III and VI are written under their respective measures.

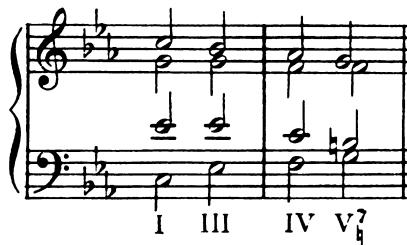
The augmented triad on III when used in the 1st inversion has a stronger dominant tendency because the dominant tone is in the bass. It may be followed by I, VI or occasionally by IV.

A musical staff in G minor (two flats) with a treble clef and a common time signature. It contains six measures. Measures 1-2: Bass notes G, B. Measures 3-4: Bass notes D, F-sharp. Measures 5-6: Bass notes A, C. Below the staff, the Roman numerals III<sub>6</sub>, I, III<sub>6</sub>, VI, III<sub>6</sub>, and IV<sub>6</sub> are written under their respective measures.

The 2nd inversion of the III triad with the raised 7th of the scale will scarcely ever occur as an independent chord; as with the other augmented III chords it will be felt as a decoration of the dominant chord. However, there can be no objection to its use in cases like the following example.



In the descending melodic minor scale, the 7th degree appears in its natural form i.e., a whole-step below the tonic. This natural 7th degree is called the *SUB-TONIC*, to distinguish it from the raised 7th degree called the *LEADING-TONE*. When this is used, the III chord is a major triad. It will be most useful in harmonizing the descending melodic minor scale. However, the raised leading-tone must be introduced as soon as possible after the sub-tonic in order to stay clearly in the minor mode.



The use of the sub-tonic as the 3rd of the dominant chord will occur very *infrequently*, except when it occurs in a sequence. The raised leading-tone has come to be a characteristic of our minor scale. The continued use of the sub-tonic suggests either modal harmony or it implies a temporary modulation to another key.

The triad on the raised leading-tone contains the same notes and functions exactly like the VII triad in the major key. Its resolutions, inversions, and functions, are same as the incomplete V', and have already been discussed in detail. The student should be reminded that the leading-tone is never doubled; this is especially true when the leading-tone is an altered note in the minor key.

The triad built on the sub-tonic is a major chord. It may occasionally be used as an approach to III, but it must be followed as soon as possible by some chord containing the raised leading-tone, in order to prevent modulation.

# CHAPTER XII

## CHORD PROGRESSIONS

The student has now studied all of the diatonic triads in the major and minor keys and has seen specific examples of their uses and functions. It is necessary for him to harmonize a great number of both melodies and basses, using this harmonic material. He must try to make his solutions as musical as possible by the use of variety in his chord selection, and also by the use of passing-notes and auxiliaries.

The secondary triads will be used sparingly and each in its most effective way. That is, the majority of the triads used will be the primary ones, I, IV, and V; the secondary triads will be used occasionally in a phrase, *in place of* a primary triad, for the sake of variety. The chords used will be selected because of their function, and in order to clarify the uses to which chords are put, the student must memorize the following table:

TONIC	1ST CLASS CHORDS	2ND CLASS CHORDS	3RD CLASS CHORDS	4TH CLASS CHORDS
I	V VII (III <sub>6</sub> in minor) #	IV II	VI	III (1)

The above table classifies chords according to their function. One of the most important parts of a musical phrase is the *cadence*; all the other chords are used as an approach to it.

The tonic chord represents a feeling of rest from which the musical phrase starts and to which it will eventually return. The study of chord progression is the study of this departure from, and return to the tonic chord. Those chords which progress strongly, with emphasis and finality, to the tonic chord are called *1st CLASS* chords. All chords which have the function of a dominant chord belong to this class; V and VII will occur most frequently but the 1st inversion of III in minor with the raised leading-tone also belongs to this group when it functions as a dominant.

The *2nd CLASS* chords are those which offer the most effective approach to the dominant or 1st Class chords, i.e., IV and II.

The *3rd CLASS* chord (VI) progresses to a 2nd Class chord and a *4th CLASS* chord is used to approach the 3rd Class chord.

The student must notice that the good chord progressions are those which occur from *right to left* in the table; chord progressions from left to right are weaker and less effective and consequently will *not* be used by the student at this time.

Elision quite often takes place in the course of a progression; that is, any one of the chord classifications may be skipped over without disturbing the progression as long as the direction is from right to left.

Here are some examples:

I — III — VI — IV — V — I is a harmonic sentence which starts with the tonic, goes to a 4th Class chord and progresses through the 3rd, 2nd, and 1st Class chords back again to the tonic.

The first progression after the tonic chord may be to another chord of *any* Class, which is then followed by the other Class chords in their normal order back to the tonic. I — IV — V — I goes from the tonic to a 2nd Class chord, to a 1st Class chord, then to the tonic again.

As we said before, when elision takes place, that is, when one of the classifications is skipped over, the normal order of progression is still maintained. I — III — IV — V — I goes from the tonic to a 4th Class chord which progresses to a 2nd Class chord, skipping over the 3rd Class; the 2nd Class progresses normally to the 1st Class which goes to the tonic.

The tonic chord may be inserted between any two chords in a progression without disturbing the normal tendency of the chords to progress back through the classifications to the cadence. I — VI — IV — I — V — I equals: Tonic — 3rd Class — 2nd Class — Tonic — 1st Class — Tonic. The tonic chord, then, has two functions: it is a point of rest from which we depart and return, and it is also a sort of neutral connecting chord between other chords.

The student must realize that this table will *aid* him in his selection of chords as they most commonly occur in music, but it does not by any means *exhaust* the harmonic possibilities which will be explored at a later time. The table gives the normal, most common chord progressions, but under certain circumstances any chord progression is possible. It will be better for the student to restrict himself to the use of chords in normal sequence and leave the "bad" chord progressions for more advanced study.

Here are a few of the most commonly used progressions derived from the above table:

I — V — I

I — III — IV — V — I

I — IV — V — I

I — III — VI — II — V — I

I — VII — I

I — II — V — I

I — VI — II — V — I

I — VI — V — I

I — VI — IV — VII — I

I — VI — IV — II — I — V — I

These progressions are equally good in both major and minor keys. The student must now invent logical chord progressions according to our table.

Here are a few additional hints about chord progression in general. When the roots of chords *fall* a 3rd, the progression is generally good.

I — VI — IV — II — VII — V — I

When the roots of chords *rise* a 3rd, the progression is most often weak. The exception to this is V — VII; this sounds good because the second chord, being a diminished triad, creates more tension than the preceding major triad.

When the root of the second chord in a progression is a perfect 4th above the root of the first chord, the progression is always good.

I — IV; II — V; III — VI; V — I; VI — II; (VII — III).

Of the progressions where the roots of the two chords are a 2nd apart, the most common are: IV — V, V — VI, VII — I, and III — IV.

The student must now test on the piano all of the progressions mentioned in this chapter, and also write numerous examples in *various keys*.

# CHAPTER XIII

## SIMPLE MODULATION

1. *IN THE MAJOR KEY.* **MODULATION** is the process of going from one key to another. We start out with a certain pitch as the center of a tonality, and by means of modulation we transfer this feeling of tonality to another set of tones and another tonic. Starting with any given key it is theoretically possible to modulate to any other key, but certain keys have chords which are common to other keys, and in this way are more-or-less related to them.

If we start with a particular major key, those keys which have their tonic chords as diatonic chords in that key, are said to be related. The *RELATED KEYS* to C major are:



From this we can deduce a principle by which we can go from one key to another. If a chord belongs to two keys, it can be approached as if it belonged to one key and left as if it belonged to another key. This is called modulation by a *COMMON CHORD*. Thus, we can approach the dominant chord of the key of C major (G, B, D) as V in C, and leave it as if it were I in the key of G major.

To establish a new key, it is necessary to have some sort of cadence involving the dominant and the tonic chords of the new key. Most often this will be a V—I cadence, but it may be a half-cadence, I—V. If this cadence does not involve a tone new to the original key, it will be necessary to add the 7th to the dominant chord in the cadence.

In other words, the listener will not recognize that a new key has been established until he hears some tone which did not belong to the original key.

The process of modulation by means of a common chord should not be abrupt, that is, a certain number of diatonic chords must precede and follow the pivot chord and the chord containing the new note. This confirmation of the new key involving a certain lapse of time is very important, since it takes the listener a while to orientate himself to the new tonic.

C Major: I      VII<sub>6</sub>      I<sub>6</sub>      V<sup>7b</sup>      I      II<sub>6</sub>      I<sub>6</sub><sub>4</sub>      V<sup>7b</sup>      I

F Major:      V<sub>6</sub>      V<sup>7b</sup>

The two tones which most conclusively establish the identity of a key are its most active ones, the 7th and the 4th degrees of the scale. When the 7th and the 4th degrees are resolved to the 8th and the 3rd degrees respectively, the feeling of tonality is conclusive. These two tones are part of the dominant 7th chord, so this chord followed by its tonic will in most cases be used to establish a new key.

In the major key the most common modulation will be to the key of the dominant, i.e., in the key of C the modulation would be to the key of G major. It is quite common in a period of two phrases for the first phrase to end in the dominant key.

In the example above, the modulation is somewhat abrupt and the second phrase returns immediately to the original key. This is a sort of temporary modulation for the purpose of the cadence, but we do not stay in the new key long enough to establish it as a separate tonality; that is, we hear the final chord of the first phrase as V in the key of C preceded by its dominant. For this reason there is a question as to whether or not this is a modulation at all; the dominant 7th chord on D is more properly called a chromatic supertonic 7th chord in the key of C major. This distinction will be clearer when we study the chromatic chords later. For the present the student will simply treat cases like the above as a transitory modulation, testing each one to see that it makes sense musically and that it is not too abrupt.

When one key progresses immediately to another without the use of a common chord, a *TRANSITION* takes place. A change of key occurs but the process of modulation is omitted and a principle of smooth voice leading is substituted for that of the common chord.

This is sometimes called a *CHROMATIC* modulation or transition to distinguish it from the common chord modulation which is *DIATONIC*. In a chromatic modulation, one or more of the voices will move chromatically; in a diatonic modulation the voices will move diatonically even though the modulation requires an accidental. For the present, while we are making modulations and transitions to the near related keys, the student will only use the chromatic transition in going from a major key to one of the related minor keys, i.e., to the key of the *supertonic*, *mediant* or *submediant*.



As we said before, the most common modulation in the first part of an exercise will be from a major key to the key of its dominant; sometimes the modulation will be to the relative minor of the dominant, i.e., in the key of C to E minor, which is the relative of G major.



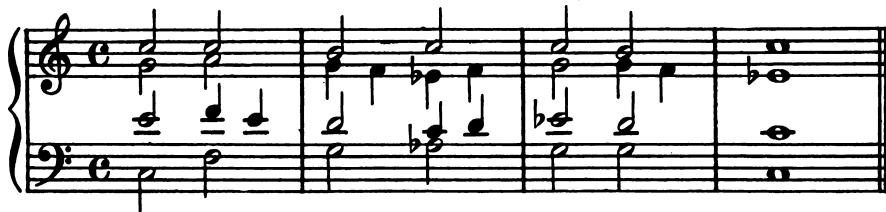
In the latter part of an exercise, the modulations will be to the key of the subdominant, its relative minor, or some other key toward the flat side. In the key of C, toward the end of a piece we might modulate to F major or D minor.



Sometimes a modulation to the related minor of the tonic key will be used as a sort of deceptive cadence. This is quite often a transition rather than a modulation.



There is one other modulation which became quite common during the 18th Century that we will discuss at this time. All of the related keys which we have discussed so far, have been but one accidental removed from the tonic key; the modulation by *CHANGE OF MODE* to the tonic minor requires the addition or subtraction of three accidentals to the key signature. This key, however, is closely related to the tonic major key because they both have the same principle tones, I, IV, V, and the dominant chord is common to both keys. The *TONAL* notes (I, IV, V) are the same but the *MODAL* notes (III, VI) are different.



Quite often a modulation is *implied* by a melody, although it may not actually contain a note foreign to the original key. The student must learn to distinguish between essential and unessential chromatic alterations.

The first example below contains no alteration and yet a modulation is implied; the second example contains an accidental but does not indicate a modulation. The altered note in the second example is simply a lower auxiliary.

1.

A musical staff in G clef (treble) and common time. It consists of seven measures. The melody starts in G major and remains there throughout, with no alterations.

2.

A musical staff in G clef (treble) and common time. It consists of eight measures. The melody starts in G major and remains there throughout, with one alteration: an F# in the fifth measure, which is a lower auxiliary note.

1.

2.

It is important to realize that after a modulation or a series of modulations in different keys, it is necessary to modulate back to the original key and to have sufficient material in this key to establish it unquestionably as a tonal center.

The instructor will give the student various melodies and basses to harmonize. The student will make modulations where appropriate, to the near related keys discussed above.

2. *IN THE MINOR KEY.* The most common modulation occurring in the minor key will be to its relative major.

The modulation to the subdominant key is common in the last part of a phrase, as it was in the major key.

If a modulation to the dominant occurs it will most often be to the dominant minor key rather than the dominant major key since this is not so distant. In the example below the student will see that the modulation is from C minor to G minor although the phrase ends with a G major chord. The substitution of the major 3rd for the minor 3rd in a final chord became a common device in the 18th Century; this is a hold-over from the 16th Century when the major triad was considered consonant, the minor 3rd being mildly dissonant. This raised 3rd is called the *TIERCE DE PICARDIE*.

In harmonizing a descending melodic minor scale we sometimes modulate to the key of the sub-mediant momentarily.

Another way of harmonizing the descending melodic minor scale will make a modulation to the key of the mediant, which has already been mentioned as the related major key.

In the major key we constructed a tonic on each degree of the scale except the 7th. This was omitted because the VII triad was a diminished and therefore a dissonant triad. For the same reason we do not modulate from a minor key to the key of its supertonic, or to the key of the leading-tone. The triad on the sub-tonic, or natural 7th degree of the scale is a major chord and may be used as a tonic of a near related key.

In the previous chapter we mentioned that the modulation was usually completed by a cadence involving the dominant 7th chord of the new key. The leading-tone triad which functions as an incomplete dominant, is also used to effect a modulation. In the minor key, it is quite common to add the 7th to the leading-tone triad for the sake of emphasis; this produces a *DIMINISHED 7th CHORD*. As its name implies, it is composed of a diminished triad and a diminished 7th. This forms a chord of superimposed minor 3rds, each member of the chord being equidistant from its two adjacent members. Each inversion of the chord sounds the same, and from the sound itself it is difficult to determine the root. The fact that this chord is ambiguous makes it particularly effective as a means of modulation, since it can be approached and left in several ways. For example, the chord B, D, F, A $\flat$ , may be the VII' in C minor, or an altered II' in the same key.

A musical score for piano in C minor (two flats). The score consists of two measures. Measure 1 is labeled VII<sup>7</sup> and measure 2 is labeled II'<sub>6</sub>. The chords are composed of superimposed minor thirds.

The chord, when written enharmonically, might also be a VII' in F $\sharp$  minor, A minor, or E $\flat$  minor.

A musical score for piano in F $\sharp$  minor (one sharp). The score consists of three measures, all labeled VII<sup>7</sup>. The chords are composed of superimposed minor thirds.

When used as in the above examples, the chord would produce modulations which are too distant to be considered now; the student will use the chord as a means of modulating to the near related keys.

Because of its effectiveness this diminished 7th chord is quite often used as a VII' in the major key as well as the minor.

A musical score for piano in C major (no sharps or flats). The score consists of two measures. The second measure is labeled VII'<sub>7</sub>. The chords are composed of superimposed minor thirds.

Below are some examples giving some of the possible resolutions of the diminished 7th chord. It is used as a means of modulation to the near related keys.

As an altered II' going to the key of the relative major.

II<sub>6</sub>

As an altered II' going to the key of the sub-dominant.

II<sub>b5</sub>

As a VII' going to the Tonic Major.

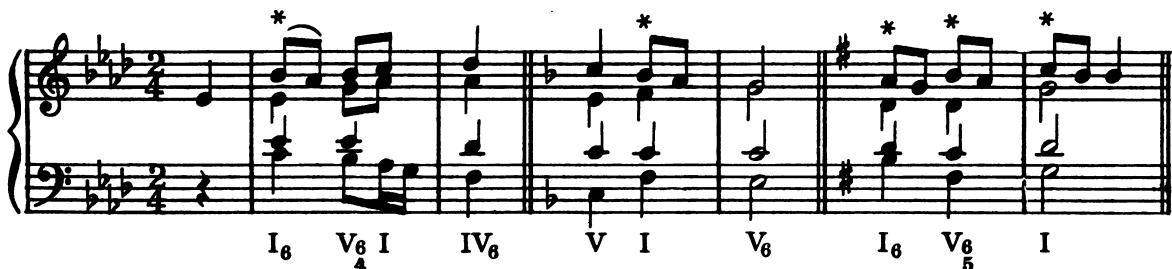
VII<sub>b5</sub>

# CHAPTER XIV

## UNESSENTIAL NOTES

The student is familiar with the contrapuntal idea from his use of passing-notes and auxiliaries. These devices give melodic significance to the individual voices and keep the exercise from sounding like a series of "block-chords". Besides the passing-notes and auxiliary, there are several other melodic devices which occur frequently and have specific names. As we said before these notes are unessential in character and merely decorate the basic harmonic structure.

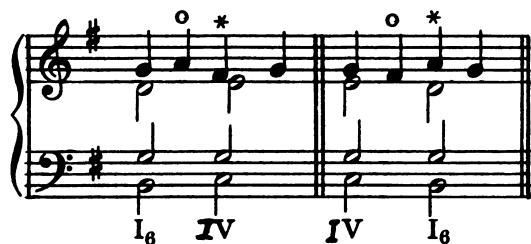
1. **THE APPOGGIATURA.** The appoggiatura is a non-harmonic tone which occurs on the strong beat and resolves by step either up or down, to a chord note. It may be approached by skip or by step, or it may occur as the first note of a piece. Some theorists term the appoggiatura approached by step, an "accented passing-note".



Occasionally an appoggiatura may be taken by repetition of a tone. This is not the same as a suspension since the repeated note occurs for rhythmic reasons.

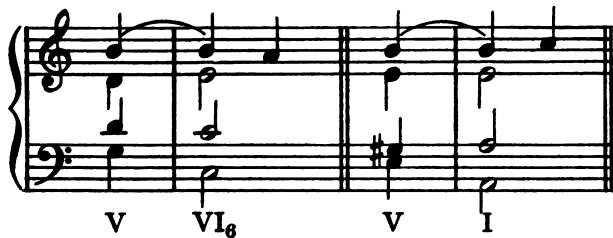


When the student studied auxiliary notes we mentioned a characteristic figure which is a combination of both the upper and the lower neighboring tones. The "auxiliary" note which comes on the strong beat (\*) is more properly called an appoggiatura.

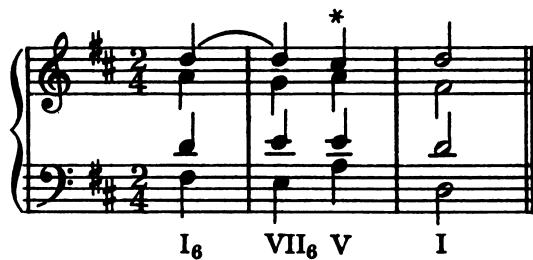


(o) The "auxiliary" note coming on the weak beat in the above example can also be called an "escape tone".

2. **THE SUSPENSION.** A suspension occurs when a chord-tone is held over from a weak to a strong beat by means of the tie. This rhythmic independence gives an added interest to that voice. The beginning of the tone, as a consonance on the weak beat, is termed the *PREPARATION*. The *SUSPENSION* proper occurs on the following strong beat where the tied note dissonates with the change of harmony. This is followed by the *RESOLUTION* to an adjacent chord-note. Most often the suspension resolves one step downward; it may, however, resolve upward. Some theorists refer to the dissonance which resolves upward as a "RETARDATION". Notice that there is always a change of harmony on the strong beat to some chord that is dissonant with the note which is tied over.



Sometimes there is also a change of harmony at the point of resolution.



In most cases the note of resolution should *not* be present when the suspension occurs. The note of resolution *sometimes* occurs in the bass when one of the upper voices has the suspension. This is also true in the case of the appoggiatura.

A musical staff in G clef and common time. It shows two examples of suspensions. The first example, labeled "Bad", shows a suspension from the I<sub>6</sub> chord (C, E, G, A) to the V chord (G, B, D, F#). The bass note A is held over from the first measure to the second measure. In the first measure, the bass note A is on a weak beat (beat 1). In the second measure, the bass note A is on a strong beat (beat 2), and it is tied over to the third measure. The bass note changes to D in the third measure. The second example, labeled "Good", shows a suspension from the I<sub>6</sub> chord (C, E, G, A) to the V chord (G, B, D, F#). The bass note A is held over from the first measure to the second measure. In the first measure, the bass note A is on a weak beat (beat 1). In the second measure, the bass note A is on a strong beat (beat 2), and it is tied over to the third measure. The bass note changes to D in the third measure. The harmonic progression is I<sub>6</sub> - V - I<sub>6</sub> - V - V<sup>7</sup> - I.

The resolution of a suspension may be ornamented by the escape tone, or by the cambiata, both of which are discussed below.

3. *THE ESCAPE TONE*. The escape tone or "echappée" is a dissonant note approached by *step* from a chord-tone and left by *skip* in the opposite direction. It occurs on the weak beat. Occasionally the tone which precedes or follows an escape tone may be an appoggiatura or a suspension. The skip is most often the interval of a third.

A musical score in 2/4 time, treble and bass staves. The key signature has one sharp. The melody consists of eighth notes. The first measure shows an escape tone (marked with an asterisk) above the V chord. The second measure shows another escape tone (marked with an asterisk) above the I chord. The third measure shows an escape tone (marked with an asterisk) below the I chord. The fourth measure shows an escape tone (marked with an asterisk) above the IV chord. The fifth measure shows an escape tone (marked with an asterisk) below the III<sub>6</sub> chord. The sixth measure shows an escape tone (marked with an asterisk) above the II chord.

4. *THE CAMBIATA*. This melodic device is derived from one of the characteristic figures of the 16th Century. It is a dissonance approached by *skip* and resolved, by *step* in the opposite direction, to a chord-tone. Like the escape tone it occurs on the weak beat.

A musical score in 2/4 time, treble and bass staves. The key signature has one sharp. The melody consists of eighth notes. The first measure shows a cambiata (marked with an asterisk) above the I chord. The second measure shows a cambiata (marked with an asterisk) above the IV chord. The third measure shows a cambiata (marked with an asterisk) above the II chord.

5. *THE ANTICIPATION*. As the name implies, a voice may anticipate a new harmony before the other voices actually move. This anticipation is always of short duration occurring on the weak beat. It occurs frequently as the tonic note at a final cadence.

A musical score in 4/4 time, treble and bass staves. The key signature has one sharp. The melody consists of eighth notes. The first measure shows an anticipation (marked with an asterisk) above the I<sub>6</sub> chord. The second measure shows an anticipation (marked with an asterisk) above the V<sup>7</sup> chord. The third measure shows an anticipation (marked with an asterisk) above the I chord. The fourth measure shows an anticipation (marked with an asterisk) above the I<sub>6</sub> chord. The fifth measure shows an anticipation (marked with an asterisk) above the V chord. The sixth measure shows an anticipation (marked with an asterisk) above the I chord.

6. **THE PEDAL.** A pedal is a long sustained note usually occurring in the bass over which the other voices continue to move. The pedal should be a consonant member of the *first* and *last* chords which occur over it, but at some point a chord should occur which is *dissonant* with the held note. The part immediately above the pedal must be treated as the bass part to the rest of the harmony, as long as the pedal lasts.

A musical score for four voices (SATB) in common time (indicated by '2'). The bass line features a sustained note (pedal) throughout the entire progression. Above the bass, the harmonic progression is as follows: I - VII<sub>4</sub> - I<sub>4</sub> - II<sub>6</sub> - IV<sub>6</sub> - I<sub>4</sub> - V. The melody and harmony change in the upper voices while the bass remains constant.

Most frequently the pedal is either the tonic or the dominant note; it may be *any* tone, however, and occasionally a double pedal occurs.

A musical score for four voices (SATB) in common time (indicated by '2'). The bass line features a double pedal (two sustained notes) throughout the entire progression. Above the bass, the harmonic progression is as follows: I - IV - V - I - V. The melody and harmony change in the upper voices while the bass remains constant.

While this device most often occurs in the bass, we may have an ***INVERTED PEDAL*** in an inner or an upper part. It should still be a consonant member of the first and last chords which occur under or over it.

A musical score for four voices (SATB) in common time (indicated by '2'). The bass line features a single sustained note (pedal) throughout the entire progression. Above the bass, the harmonic progression is as follows: I - IV - V - I - V. The melody and harmony change in the upper voices while the bass remains constant.

The pedal may be a long sustained note or it may be reiterated in some rhythmic pattern.

A musical score for four voices (SATB) in common time (indicated by '2'). The bass line features a single sustained note (pedal) throughout the entire progression. Above the bass, the harmonic progression is as follows: I - IV - V - I - V. The melody and harmony change in the upper voices while the bass remains constant. The pedal note is reiterate in a rhythmic pattern of eighth notes.

The student must employ these contrapuntal devices just discussed with taste and discretion in his exercises. In the complex use of this unessential material some of these devices may be used in combination. Only one particular case will be mentioned here.

In the example below two dissonant notes stand together. The first dissonance is approached from a consonance as a passing-tone; and we expect it to be followed by another chord-note. This second chord-note, however, is displaced by an appoggiatura which is finally resolved by step to a consonant note.

A musical score in G clef and common time. The bass line consists of six vertical stems. The first stem is labeled I<sub>6</sub>, the second is marked with an asterisk (\*), the third is marked with an asterisk and V<sub>6</sub>, the fourth is labeled I, the fifth is labeled I<sub>6</sub>, and the sixth is labeled V. The top line has four vertical stems. The first stem is a short note above the staff, the second is a short note below the staff, the third is a short note above the staff, and the fourth is a short note below the staff.

Very rarely the student may discover some dissonant tone which does not fit into any of the foregoing classifications. These are called *free tones*.

A musical score in G clef and common time. The bass line consists of six vertical stems. The first stem is labeled I, the second is labeled VI, the third is labeled V, the fourth is labeled I<sub>6</sub>, the fifth is labeled V<sub>6</sub>, and the sixth is labeled I. The top line has four vertical stems. The first stem is a short note above the staff with an asterisk (\*). The second stem is a short note below the staff with an asterisk (\*). The third stem is a short note above the staff with an asterisk (\*). The fourth stem is a short note below the staff with an asterisk (\*).

The importance of using dissonance as decorative material cannot be stressed too much. The use of the devices discussed above will give independence to the melodic line of each separate voice. This contrapuntal freedom within a rigid harmonic framework is the essence of the Bach style and should be the aim toward which the student works.

# CHAPTER XV

## DIATONIC SEVENTH CHORDS

The following example will be familiar to the student from his study of the suspension. He will notice that, while the suspended note in the second chord is dissonant, it can, however, be related to the root of the harmony as the seventh.



We have already discussed and used a seventh chord where the dominant note is the root. This seventh was taken without preparation and resolved one step downward. The seventh chords occurring on the other degrees of the scale are used less frequently than the dominant seventh chord, but are, nevertheless, a necessary and important part of our harmonic vocabulary.

These are the diatonic seventh chords of the key of C Major:



In early music these discords of the seventh were prepared in the previous chord and were resolved one step downward to the third of a chord, the root of which was usually a fourth above the root of the seventh chord. Progressions like the following occurred frequently:

A musical score in G clef and common time. It shows a single staff with a sequence of chords: C: I<sub>6</sub>, II<sup>7</sup>, V<sup>7</sup>, I<sup>7</sup>, IV<sup>7</sup>, VII<sup>7</sup>, V<sup>7</sup>, and I. The bass line remains constant at G throughout. The progression follows a typical early music pattern: I<sub>6</sub> leads to II<sup>7</sup>, which has a suspended note (F) that resolves to G in the next measure. V<sup>7</sup> leads to I<sup>7</sup>, which has a suspended note (D) that resolves to E in the next measure. IV<sup>7</sup> leads to VII<sup>7</sup>, which has a suspended note (B) that resolves to C in the next measure. VII<sup>7</sup> leads to V<sup>7</sup>, which has a suspended note (G) that resolves to A in the final measure. Finally, V<sup>7</sup> leads back to I.

To-day we no longer require a preparation for the diatonic seventh chord; the seventh, however, is still normally resolved one step downward to a concord. The *strongest* resolution is the one given above where the seventh resolves to the third of the next chord, but other resolutions are possible.

A musical staff in G clef (treble) and F clef (bass). It shows a sequence of chords: C major (IV<sup>7</sup>), G major (V), D major (VII<sup>7</sup>), A major (I), E major (VI<sup>7</sup>), and e minor (IV<sup>7</sup>). The progression continues to e minor (V) and then back to A major (I). The notes are represented by open circles on the staff.

It is also possible for the seventh to resolve one step downward while the rest of the chord remains. This produces another diatonic seventh chord.

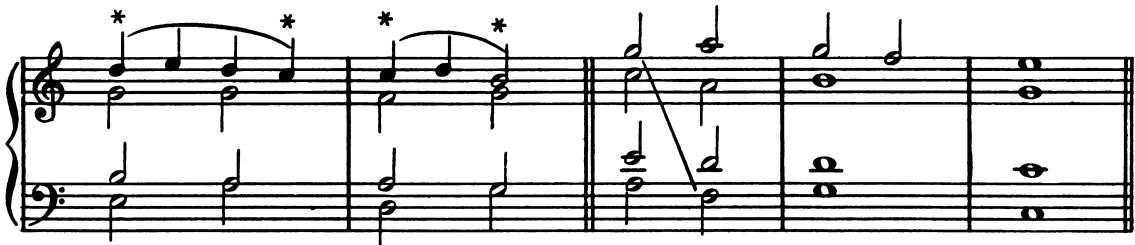
A musical staff in G clef (treble) and F clef (bass). It shows a sequence of chords: A major (I<sub>6</sub>), D major (II<sup>7</sup>), C major (VII<sub>6</sub>), C major (VII<sub>6</sub>), G major (I<sup>7</sup>), and E major (VI<sub>6</sub>). The notes are represented by open circles on the staff. The resolution involves the seventh note moving down a step while the other parts remain.

We may resolve the seventh of a diatonic seventh chord in one of three ways:

- (1) One step downward while the other parts move to a new concord.
- (2) One step downward while the other parts remain; this requires a further resolution.
- (3) One step downward while the other parts move to a new discord; this also requires a resolution.

A musical staff in G clef (treble) and F clef (bass). It shows a sequence of chords: D major (II<sup>7</sup>), G major (V), D major (II<sup>7</sup>), C major (VII<sub>6</sub>), A major (I<sub>6</sub>), D major (II<sup>7</sup>), G major (V<sup>7</sup>), and A major (I). The notes are represented by open circles on the staff. The staff is divided into three sections labeled (1), (2), and (3), each illustrating a different resolution method for the seventh chord.

The upward resolution of the seventh is never satisfactory except in cases like the following where the upper note is only a decoration or where the bass voice takes the note of resolution.

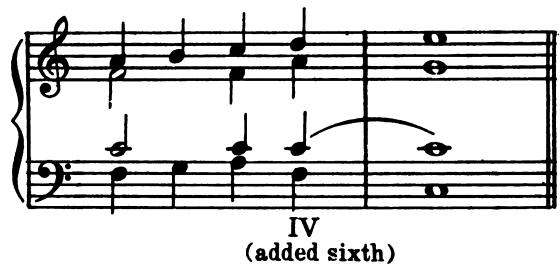
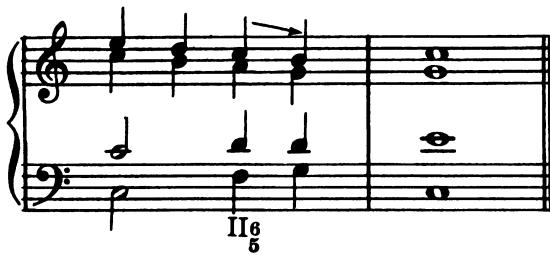


The most important of the diatonic seventh chords is the II<sup>7</sup>, which is used as an approach to V. This chord in the 1st inversion is the most frequently used approach to the cadence in the Bach style. The third of the chord in the bass progressing to the root of the dominant chord makes a very strong cadential impression; this is particularly true in minor where the II is a diminished chord.

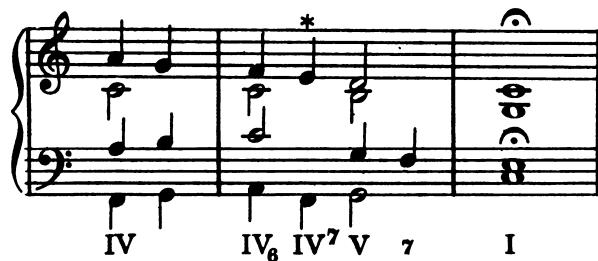
The almost exclusive use of this chord in the 1st inversion has given it a strong *subdominant* feeling. This subdominant character of the II<sub>6</sub> is very evident in examples like the following which evolved from the plagal cadence decorated by a passing tone.

The bass tone of the above example is strongly felt to be the root rather than the third of the chord above it. This chord is more accurately described as a "chord of the added sixth" on the subdominant rather than a supertonic seventh chord in the 1st inversion. In contemporary music this major chord with the added sixth has been treated as a consonance and composers have not hesitated to use this added note even in the final chord.

The student will have to decide for himself whether this chord, in each particular context, is a seventh chord or a triad with an added sixth. In one case a resolution will be necessary and in the other will be entirely out of place.



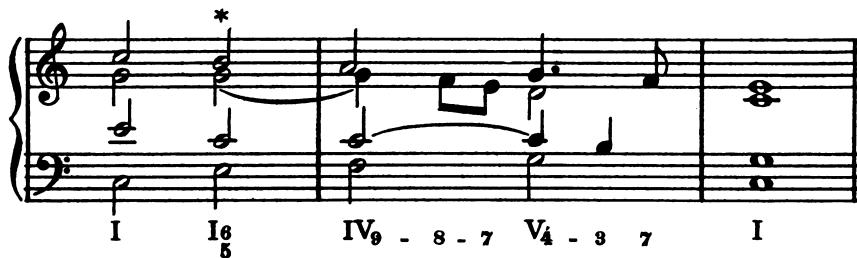
The IV' also is used as an approach to the dominant. A good example of the effective use of this chord is in the strong cadence at the end of the Lutheran Choral "Ein feste Burg ist unser Gott".



The seventh chord built upon the leading-tone in major has the same dominant tendency that the VII triad has. This chord is most often called a "dominant 9th with root omitted". The leading-tone is never doubled even though it is the root of this chord. In most cases the root of the chord ascends to the tonic, and the 5th and 7th fall one step downward to the 3rd and 5th of the I chord. To avoid doubling the 3rd in the I chord, sometimes the 5th of the VII' ascends.



The diatonic seventh chords on I, III and VI do not have the same functional importance as do those on II, IV and VII which we have discussed. The I' occurs sometimes in either root position or 1st inversion as an approach to the subdominant.



Normally III' resolves to VI and VI' resolves to II; these progressions being useful as sequences of stronger chord progressions.

In the harmonic minor scale these seventh chords appear:

In general, these chords are used exactly like those in the major key. The II' will most frequently be found in the 1st inversion since it is a diminished chord. The seventh chord on the raised leading-tone has already been discussed as the diminished seventh chord, its function being primarily dominant.

# CHAPTER XVI

## THE CADENCE IN THE BACH CHORALES

Some of the more apparent features of the Bach style are to be found in the cadences and their approach. The feeling of strength and harmonic solidarity is due to the very strong and emphatic cadences which occur so frequently in Bach's writing. We will try to systematize these cadences according to their kind and to the manner in which they are approached. For our examples we will use the 371 Chorales which were harmonized by Bach for use in his church services.

The perfect cadence is the one most frequently found, both chords being in root position. Harmonic variety is obtained by modulation. That is, the different phrases of a chorale may end with perfect cadences in various related keys rather than with imperfect, deceptive or plagal cadences in the same key.

No. 64

The image shows three staves of musical notation for Bach Chorale No. 64. The notation is in common time and consists of two treble staves and one bass staff. The first staff begins with a D major chord (D, F#, A) followed by a G major chord (G, B, D). The second staff begins with a G major chord (G, B, D) followed by an I chord (G). The third staff begins with an e minor chord (E, G, B) followed by a V<sup>#</sup> chord (B, D, F#) and then an I chord (E).

D: V I      G: V I

G: V I      G: I V

e: V<sup>#</sup> I      G: V I

The dominant bass note of the perfect cadence, with one exception in the minor key, is practically always approached from below. The most frequent approach is from the fourth degree of the scale. This precadence chord with the subdominant bass note will be IV, II<sub>6</sub> or II<sub>6</sub><sup>5</sup>

## No. 148

C: IV V I

## No. 208

e: II<sub>6</sub> V I

## No. 80

D: II<sub>6</sub> V I

The *most frequent* approach is by the II' in the first inversion; less frequently the triad on II is used; the root position of IV is found least of all. Of course, all of these cadences are most often decorated with unessential notes or the I<sub>6</sub> chord.

4

## No. 178

B<sub>b</sub>: II<sub>6</sub> I<sub>6</sub><sub>4</sub> V I

Sometimes in the major key this fourth degree is raised as the third of the dominant of the dominant.

No. 89

A:  $V_6/5$  I  
D: V I

The dominant bass note occasionally is approached from a third below but more often the intervening step is filled by a passing-note.

Infrequent

No. 293

G: I<sub>6</sub> V I

Quite Common:

No. 68

F: I<sub>6</sub> V I

The fourth below the dominant bass note occurs quite frequently since this tone stands in the dominant relation to the dominant. This is used even in the minor key where the super-tonic triad is diminished.

No. 275

A musical score for two staves. The top staff is in treble clef and the bottom staff is in bass clef. Both staves are in A major (three sharps). The music consists of six measures. Measure 1: Treble starts on A, bass on E. Measure 2: Treble on G, bass on D. Measure 3: Treble on F, bass on C. Measure 4: Treble on E, bass on B. Measure 5: Treble on D, bass on A. Measure 6: Treble on C, bass on G. The bass line ends with a half note G. Below the staff, the key signature is given as A: II<sup>7</sup> V<sup>7</sup> I.

No. 285

A musical score for two staves. The top staff is in treble clef and the bottom staff is in bass clef. Both staves are in a minor (no sharps or flats). The music consists of six measures. Measure 1: Treble starts on A, bass on E. Measure 2: Treble on G, bass on D. Measure 3: Treble on F, bass on C. Measure 4: Treble on E, bass on B. Measure 5: Treble on D, bass on A. Measure 6: Treble on C, bass on G. The bass line ends with a half note G. Below the staff, the key signature is given as a: II<sup>7</sup> V<sup>7</sup> I.

The approach to the dominant chord from the tonic note a fifth below occurs sometimes but is not very effective since it anticipates the final bass note in the cadence.

No. 287

A musical score for two staves. The top staff is in treble clef and the bottom staff is in bass clef. Both staves are in a minor (no sharps or flats). The music consists of six measures. Measure 1: Treble starts on A, bass on E. Measure 2: Treble on G, bass on D. Measure 3: Treble on F, bass on C. Measure 4: Treble on E, bass on B. Measure 5: Treble on D, bass on A. Measure 6: Treble on C, bass on G. The bass line ends with a half note G. Below the staff, the key signature is given as a: I V<sub>4-#3</sub> I<sub>#</sub>.

When the final tonic bass note is an octave higher than the approach to the cadence this anticipation is not so noticeable.

No. 119

c: I V<sub>b</sub> I

When the dominant bass note in the final cadence is approached from *above* it is almost always from the tonic or the supertonic note in either the major or the minor key.

No. 29

G: I V I

No. 37

a: I V<sub>4-#3</sub> I

No. 58

f#: II<sup>7</sup> V<sub>4-#3</sub><sup>7</sup> I

Occasionally it will be approached from a third above when this is part of the dominant chord.

No. 140

G: V<sub>6</sub> V<sub>7</sub> I

When the dominant note in the cadence is approached by the supertonic from either above or below, the final tonic note is taken in the opposite direction. In the example below, which is an extremely rare one, this does *not* happen and we have two melodic skips of a fourth in the same direction. The student should *not* write this kind of bass line for the perfect cadence.

Unusual:

No. 337

4th      4th  
7th

Better:

→      →

In the *minor* key it is quite common to approach the dominant bass note from the step above. This approach is not very effective in the major key.

Common:

No. 125

a: IV  $\frac{7-6}{7-6-5}$  I

Unusual:

No. 158

G: VI  $\frac{V_4-3}{I}$

The half-cadence on the dominant is approached the same way as is the dominant chord in the full cadence; the chords, however, fall on different beats of the measure. This metrical accent is very important in determining the character of a cadence.

No. 25

f: IV  $\frac{V_4-3}{V}$

Frequently the dominant bass note in the half-cadence is approached by a broken tonic chord.

No. 61

c: I I<sub>6</sub> V

This cadence is much more common with the addition of passing notes in the bass and with a suspension above.

No. 151

e: I<sub>9</sub> - I<sub>6</sub> V

In the half cadence in the minor key, the bass note of the dominant chord can be approached from the half-step above as it was in the full cadence. This is sometimes called the *PHRYGIAN CADENCE* because it resembles the final cadence of the Phrygian mode where the second degree of the scale lies one half-step above the tonic.

No. 345

a: IV<sub>6</sub> V

Bach sometimes uses the plagal cadence in the final phrase of a choral in the Phrygian mode.

No. 89

A musical score for two staves. The top staff has a treble clef and the bottom staff has a bass clef. Both staves are in common time. The key signature changes from C major to F# major (IV) and then back to C major (I). The music consists of eighth and sixteenth note patterns.

No. 113

A musical score for two staves. The top staff has a treble clef and the bottom staff has a bass clef. Both staves are in common time. The key signature changes from C major to F major (IV<sub>b6</sub>/4) and then back to C major (I). The music consists of eighth and sixteenth note patterns.

Here is an extended plagal cadence in the major key using the lowered sixth and seventh degrees of the scale which are borrowed from the tonic minor key.

No. 279

A musical score for two staves. The top staff has a treble clef and the bottom staff has a bass clef. Both staves are in common time. The key signature changes from C major to V and then to VI. The music consists of eighth and sixteenth note patterns.

The deceptive cadence from V to VI is used for variety. In both major and minor the third of VI is always doubled. Sometimes the major triad built upon the lowered sixth degree of the scale in major is used; this is of course derived from the tonic minor key. The approach is exactly the same as the approach to a perfect cadence.

No. 267

A musical score for two staves. The top staff has a treble clef and the bottom staff has a bass clef. Both staves are in common time. The key signature changes from C major to F major (II<sub>b5</sub>) and then to V, followed by a change to B-flat major (bVI). The music consists of eighth and sixteenth note patterns.

In harmonizing melodies the student should first of all decide upon the harmony for the *cadence*, and then upon the best *approach* to the cadence chords. In effect, he starts at the cadence and works backward. The logical approach to the cadence can best be studied by memorizing the following cadences and transposing them to all keys. These are the usual approaches to the cadence all written in the key of C for comparison.

## FULL CADENCE

### MAJOR

A musical score for a full cadence in major. It consists of two staves: treble and bass. The treble staff has a key signature of one sharp (F#). The bass staff has a key signature of no sharps or flats. The score is divided into four measures. The first measure shows a progression from II<sub>6</sub><sup>5</sup> to V, followed by a fermata over the V chord. The second measure shows the V chord followed by a fermata over the I chord. The third measure shows the I chord followed by a fermata over the I chord. The fourth measure shows the I chord again.

### MINOR

A musical score for a full cadence in minor. It consists of two staves: treble and bass. The treble staff has a key signature of one flat (B-flat). The bass staff has a key signature of one flat (B-flat). The score is divided into four measures. The first measure shows a progression from II<sub>6</sub> to I<sub>6</sub><sup>4</sup>, followed by a fermata over the V<sub>7</sub> chord. The second measure shows the I<sub>6</sub><sup>4</sup> chord followed by a fermata over the I chord. The third measure shows the V<sub>7</sub> chord followed by a fermata over the I chord. The fourth measure shows the I chord again.

A musical score for another variation of a full cadence in minor. It consists of two staves: treble and bass. The treble staff has a key signature of one flat (B-flat). The bass staff has a key signature of one flat (B-flat). The score is divided into four measures. The first measure shows a progression from IV to V, followed by a fermata over the I chord. The second measure shows the V chord followed by a fermata over the I chord. The third measure shows the I chord again. The fourth measure shows a V<sub>8-7</sub> chord (with 6-5 inversion) followed by a fermata over the I chord.

A musical score for a final variation of a full cadence in minor. It consists of two staves: treble and bass. The treble staff has a key signature of one flat (B-flat). The bass staff has a key signature of one flat (B-flat). The score is divided into three measures. The first measure shows a progression from V<sub>8-5</sub> to I<sub>9-8-5</sub>, followed by a fermata over the I chord. The second measure shows the I<sub>9-8-5</sub> chord followed by a fermata over the I chord. The third measure shows the I chord again.

(G: V<sub>8-5</sub>

C: V<sub>9-8-5</sub>)

# FULL CADENCE (Continued)

MAJOR

Piano sheet music in common time (C). The left hand (bass) plays sustained notes. The right hand (treble) plays a harmonic progression: I<sub>6</sub>, V, 7, I<sub>4-2-3</sub>. The key signature is one sharp (F# major).

I<sub>6</sub>    V    7    I<sub>4-2-3</sub>

MINOR

Piano sheet music in common time (C). The left hand (bass) plays sustained notes. The right hand (treble) plays a harmonic progression: II<sub>6</sub>, II<sub>7</sub>, V<sub>7</sub>, I<sub>4-3-2-3</sub>, II<sub>6</sub>, II, I<sub>6</sub><sub>4</sub>, V<sub>4</sub>, I. The key signature is one flat (D minor).

II<sub>6</sub>    II<sub>7</sub>    V<sub>7</sub>    I<sub>4-3-2-3</sub>    II<sub>6</sub>    II    I<sub>6</sub><sub>4</sub>    V<sub>4</sub>    I

Piano sheet music in common time (C). The left hand (bass) plays sustained notes. The right hand (treble) plays a harmonic progression: I<sub>3-2</sub>, V<sub>4-3</sub>, I, I, V<sub>4</sub>, I<sub>4</sub>. The key signature is one flat (D minor).

I<sub>3-2</sub>    V<sub>4-3</sub>    I    I    V<sub>4</sub>    I<sub>4</sub>

Piano sheet music in common time (C). The left hand (bass) plays sustained notes. The right hand (treble) plays a harmonic progression: I, V<sub>7</sub>, I, I, V<sub>7</sub><sub>4</sub>, I. The key signature is one flat (D minor).

I    V<sub>7</sub>    I    I    V<sub>7</sub><sub>4</sub>    I

## FULL CADENCE (Continued)

MAJOR    MINOR

II       $V_4 - 3$       I      II<sub>7</sub>       $V_{8-7}$   
 $\frac{6}{5}$       I<sub>4</sub>

IV<sub>6</sub>       $V_{7-8}$   
 $\frac{5}{4}$       I<sub>4</sub>

## HALF CADENCE

MAJOR                                    MINOR

I<sub>6</sub>      IV<sub>7</sub>       $V_{4-2-8}$   
 I<sub>6</sub>      II<sub>6-5</sub>      V

I      I<sub>6</sub>      V  
 $\frac{5}{3}$       I<sub>6</sub>      V

## PHRYGIAN CADENCE (HALF)

MINOR

VI      IV<sub>6</sub>      V<sub>8</sub>

## PLAGAL CADENCE

MAJOR

MINOR

IV      (II<sub>6</sub>)      I      I<sub>6</sub>      IV      I<sub>8</sub>

## DECEPTIVE CADENCE

MAJOR

MINOR

II<sub>6</sub>      V      VI      II<sub>6</sub>      V      VI

II<sub>6-5</sub>      V<sub>9-8-7</sub>      bVI<sub>b5</sub>

# CHAPTER XVII

## HIGHER DOMINANT DISCORDS

1. **THE DOMINANT NINTH CHORD.** It will be apparent to the student that, with the addition of the seventh to the dominant triad, a principle of chordal construction has been carried one step further. This principle of building chords in superimposed thirds can be continued. The next addition to the seventh chord is a tone which is a ninth from the root and the resulting chord is therefore called a "ninth chord".



Since this chord contains five notes, one of them must be omitted in four-part harmony; this is almost always the fifth of the chord.



In using the dominant ninth chord the *ninth* like any other dissonant tone *requires* a *resolution*; it does *not* require *preparation*. The seventh of the chord must, of course, still be resolved. In order to have a satisfactory resolution for these two dissonant tones the dominant ninth chord will practically always be followed by some position of the tonic chord, each tone fulfilling its logical tendency. The treatment of the chord is the same in both the major and the minor key.



The ninth may also resolve either up or down while the rest of the dominant chord remains. In either case it will sound like a decoration of the root or third of the dominant seventh chord.



In some harmony texts there are rules governing the placement of the tones in this chord. These rules say, "the ninth must appear in the soprano", that, "an interval of a second must not appear between the two highest parts", or "the ninth must not be sounded below the root of the chord", etc. Composers have shown that these rules are *not necessarily true*. The student will have to use his judgment in placing the notes in the chord so that they actually sound, and it is quite true that the chord will occur most frequently in the positions given in these examples, but other positions are *possible* within a particular context.

The ninth chord in the first inversion requires no new rule.

Major	Minor
$V_7 \frac{6}{5}$	I

A second inversion of the chord as we have used it above is not possible since the fifth has been omitted. It is possible, however, to omit the root of the chord. This actually produces a seventh chord built upon the leading-tone, but many theorists refer to this chord as an "incomplete dominant ninth".

Major	Minor
$V_6 \frac{5}{4} \text{ (omitted 4)}$	I <sub>6</sub>
$(VII_6 \frac{5}{4})$	

In the following example the third has been omitted. While this is a useable tonal combination, it does not sound like a dominant ninth chord; the D sounds like the root of a minor triad, the G being some sort of dominant pedal.

$\left( \begin{smallmatrix} V_5 \\ 4 \\ 3 \end{smallmatrix} \right)$

The third and fourth inversions of the ninth chord will occur infrequently, but are possible.

$V_4 \\ 3 \\ 2$        $I_6$        $V_7 \\ 6 \\ 2$        $I_6 \\ 4$        $V$        $7$        $I$

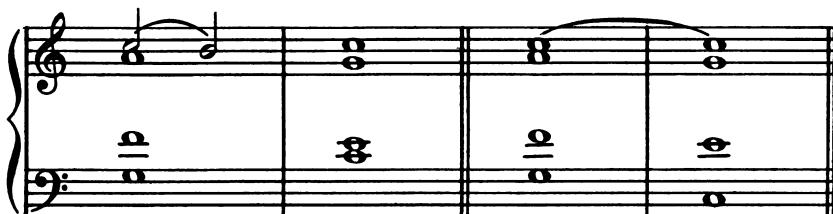
2. **THE DOMINANT ELEVENTH CHORD.** If we superimpose another third on the dominant ninth chord we have the following combination.

Major	Minor

In four parts it is necessary to omit two of the tones in the chord.

Major	Minor

In use, the tone which is an eleventh from the root will most often resolve one step downward while the rest of the chord remains; occasionally it may remain to be a part of the succeeding chord.



In either case the eleventh is heard as a decorative tone and not as an essential chord tone, therefore, the *dominant eleventh chord exists only in theory*.

While we are not studying chromatic harmony at this point it will be well to mention the chord containing an *augmented eleventh* from the root. This again is not a real chord member. Depending upon the way it is treated, the augmented eleventh will be an appoggiatura to the fifth of the dominant chord, or the lowered fifth of the dominant chord (notated incorrectly).

A musical staff in G major (G-C-E-B) with a treble clef. It shows two dominant chords: one with an augmented eleventh (G, B, D, F#, G) and another with a lowered fifth (G, B, D, F, G). Two arrows point downwards from the staff to labels below. The first arrow points to the first chord and is labeled "Augmented eleventh as an appoggiatura to the 5th of V.". The second arrow points to the second chord and is labeled "Augmented eleventh as a lowered 5th of V.".

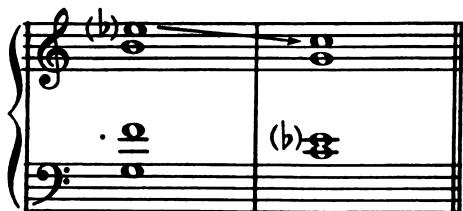
3. **THE DOMINANT THIRTEENTH CHORD.** With the addition of one more third to the dominant eleventh chord we have a chord containing all of the diatonic steps in the scale. This thirteenth, like the eleventh, is most often used as a decorative note to some chord tone. In the example below it decorates the fifth of the dominant seventh chord.

Major or Minor

A musical staff in G major (G-C-E-B) with a treble clef. It shows a dominant thirteenth chord consisting of the notes G, B, D, F#, A, C, and E. The note E is highlighted with a circle and a bracket above the staff, indicating it is the thirteenth note from the root G.

Cases similar to the above example occurred so frequently, and the cadential meaning was so clear that composers omitted the resolution of the thirteenth. This gives us the *only* example of a dominant thirteenth chord as such. The thirteenth is *not* resolved by step but falls to the tonic note in the next chord.

Major or Minor



# CHAPTER XVIII

## SECONDARY DOMINANTS

In his elementary work in theory the student discovered that all of the diatonic major and minor triads found in a key could become the tonic chord of a related key. In a major key II, III, IV, V, and VI are all tonics of related keys; in a minor key III, IV, V, (with the natural 7th degree) VI, and VII (built on the natural 7th degree) may also be used as tonics of related keys. These related keys are the ones to which a modulation is most likely to be made from any given key.

All of the above diatonic major and minor triads can be preceded by their respective dominants *without* effecting a modulation. In other words any diatonic triad may be emphasized by its dominant chord without necessarily becoming a new tonal center.

In order to make these secondary dominant (or dominant 7th) chords it is necessary to make alterations in the original tones of a key; and in order to stay clearly in the original key it is also necessary to *cancel* these alterations as soon as possible after their use.

Here is an example which will be familiar to the student's ear as a kind of intensified final cadence. The dominant 7th chord is preceded by its own dominant 7th chord.

C: I      V<sub>4-3</sub>      II<sub>6-5</sub>      V      I

Notice that the raised third of the supertonic triad (II) is cancelled immediately and that this does not constitute a real modulation to the key of the dominant.

In the following example a sequential pattern is set-up in which several of the diatonic triads in the key of C major are preceded by their respective dominants; the phrase, however, clearly begins and ends in the tonic key.

It is unnecessary to have a complete dominant triad or 7th chord to produce a cadential effect; any chord which has a *dominant function*, such as VII or VII' may be used.

A musical staff in G major (one sharp) and common time. It shows five chords: I (C major), V/8 (G major), II<sup>5</sup>/3 (D major), V<sub>13</sub>/7 (G major with a 7th), and I (C major). The bass line consists of sustained notes C, G, D, G, and C respectively.

In connection with these secondary dominant chords it may be well to mention that when the 7th is added to the dominant chord, or in most cases when any dissonant chord is used, the effect of false relation is minimized. The following example is perfectly good.

A musical staff in G major (one sharp) and common time. It shows the same sequence of chords as the first staff: I, V/8, II<sup>5</sup>/3, V<sub>13</sub>/7, and I. Two arrows point from the 7th note of the V<sub>13</sub>/7 chord (B) down to the 3rd note of the I chord (C), illustrating the resolution of the 7th chord.

# CHAPTER XIX

## COMPLEX USE OF THE TRADITIONAL MATERIAL

Before going into chromatic harmony it may be well to say something about the more complex use of the material already presented. In the chapter on unessential melodic devices, for the sake of clarity, we gave simple examples in which unessential notes of *one species* were used in *one voice*. In practice many elaborations and the use of *several species* used *simultaneously* are possible; but the writing should *not lose clarity* or become overly complex.

Here are some examples of the same *species* used in *parallel motion* in more than one part.

Auxiliary notes are possible in parallel thirds and sixths.

c: I \_\_\_\_\_ IV \_\_\_\_\_ II<sup>7</sup> \_\_\_\_\_ V<sub>4</sub> \_\_\_\_\_

I \_\_\_\_\_ VII (b) \_\_\_\_\_ VI \_\_\_\_\_ V<sup>7</sup> (b) I etc.

The same thing is true of passing-notes.

C: I \_\_\_\_\_ a: I \_\_\_\_\_ etc.

Occasionally, simultaneous passing-notes in three voices may produce a passing-chord.

V ————— 7                    I

etc.

In writing decorative notes, whether in one part or several, it is best to use notes which belong to the key of the implied *chord*. In the following example the chromatic notes are purely unessential and do not constitute a modulation; the B $\flat$  and C $\sharp$  in the second measure are borrowed from the key of D minor.

C: I ————— I<sub>6</sub> ————— II ————— II<sub>6</sub> —————

etc.

The same procedure, that of writing auxiliaries and passing-notes in parallel motion in several parts, is also applicable to other species of unessential notes, such as the appoggiatura and the suspension.

I ————— (I<sub>6</sub>)    V<sub>7</sub>    I    V    VI<sub>7</sub>    VII<sub>7</sub>    I —————

In the example which follows, one of these devices (the passing-note) is used simultaneously in different voices and in *contrary* motion. The example is not overly complex because the passing-notes make consonant combinations (passing-chords).



The appoggiatura in different voices and in contrary motion.



The use of *both similar* and *contrary* motion brings up an interesting point for experiment. In writing simultaneous auxiliaries or passing-notes in contrary motion in different parts, each part may move correctly but the resulting harmony may be entirely unconventional. In some cases the resulting harmony will make an ugly sound and is therefore bad, in other cases the harmony formed by these adjacent tones may be quite appropriate.

Here is an example from the *Adagio* of the *Brandenburg Concerto No. 1* of J. S. Bach where conflicting auxiliary notes are used simultaneously between oboes and strings.

A musical score excerpt in 3/4 time. The top staff is for Oboes, starting with a quarter note followed by a sixteenth-note auxiliary note (sharp) before the main note. The bottom staff is for 'Cello, with a sustained eighth note followed by a sixteenth-note auxiliary note (flat) before the main note. The score ends with an 'etc.' instruction.

Obviously the arrangements of these conflicting upper and lower neighboring-tones or appoggiaturas are almost endless in number. The student should write a great many exercises using different combinations of upper and lower auxiliaries, taking care that each part moves correctly regardless of the resulting harmonic sound.

Next, let us look at a complication resulting from *oblique* motion. Quite often, in a chord, we will have two notes of the same letter-name but with different accidentals. This device is quite common and perfectly good provided each of the two notes satisfies its own tendency.

A musical score excerpt in 3/4 time. It shows two instances of oblique motion in a single chord. In the first instance, the bassoon has a C natural and a C sharp. In the second instance, the bassoon has a C sharp and a C flat. The score ends with an 'etc.' instruction.

The final complexity results from the simultaneous use of *different species* in *different motions* (similar, contrary, or oblique).

A musical score excerpt in 3/4 time. It illustrates the simultaneous use of different species in different motions. The top staff shows a soprano line with various rhythmic patterns and accidentals. The bottom staff shows a bassoon line with similar complexity. The score consists of two systems of music.

The student should now do a great number of exercises in a free harmonic style utilizing all of the material presented so far and making particular use of the devices discussed in this chapter.

# CHAPTER XX

## THE CHROMATIC SUPERTONIC CHORD

Before beginning the study of chromatic harmony the student, in his own mind, should clearly differentiate between the various *kinds* of chromatic notes. These are:

1. A chromatically altered *unessential* tone which does *not* change the tonality (upper and lower auxiliary notes, etc.).
2. A chromatically altered *essential* tone which changes the tonality (modulation).
3. A chromatically altered *essential* tone which does *not* change the tonality (altered chords).

We have already discussed notes of the unessential nature and explained the principle behind simple modulation; our concern now will be with chromatically altered chords that remain in, or only momentarily digress from, a tonality.

Probably the most common chromatic chord is the supertonic triad or seventh chord with a raised third. This is often called "the dominant of the dominant," since it stands in that relation to the dominant key.



In order to stay clearly in the original key (i.e. *not* modulate) the chromatic supertonic chord must be followed by a dominant dischord or an inversion of the tonic chord which in turn resolves to the dominant dischord.

A musical staff in G major shows a II<sup>#</sup>7 chord followed by a V7 chord. The II<sup>#</sup>7 chord has its root (B) at the top. The V7 chord has its fifth (F#) at the top. The bass note is C. The label "II<sup>#</sup>" is under the first chord, and "V7" is under the second chord.A musical staff in G major shows a II<sub>6</sub>/5 chord followed by an I<sub>4</sub>/5 chord. The II<sub>6</sub>/5 chord has its root (B) at the top. The I<sub>4</sub>/5 chord has its fifth (F#) at the top. The bass note is C. The label "II<sub>6</sub>/5" is under the first chord, and "I<sub>4</sub>/5" is under the second chord.

Since the reason for raising the third of this chord is to increase the tendency of this tone to resolve to the dominant, it will normally resolve upward, but it may resolve a half-step down-ward to the seventh of the dominant chord.

A musical staff in G major (one sharp) showing four chords. The first chord is V (D7). The second chord is II<sub>6</sub> (B7). The third chord is V<sub>4</sub><sub>2</sub> (D7), with the third scale degree (F#) doubled. The fourth chord is I<sub>6</sub> (G6). The bass line moves from D to B to A to G.

The third of this chord is *very seldom doubled* because of its leading-tone character, and usually it is *not left by skip*.

The addition of the seventh to the supertonic chromatic triad intensifies its tendency to resolve to dominant harmony. The seventh will resolve normally one degree downward; it may, however, proceed one degree upward, or, if followed by the tonic chord, remain.

Three sets of musical staves illustrating harmonic progressions:

- Top set: I - V - II<sub>6</sub><sub>5</sub> - V<sub>4</sub><sub>7</sub> - I. The II<sub>6</sub><sub>5</sub> chord has the root omitted. The V<sub>4</sub><sub>7</sub> chord has the third (F#) omitted.
- Middle set: I - V - II<sub>7</sub> - V<sub>6</sub><sub>5</sub> - I. The II<sub>7</sub> chord has the root omitted. The V<sub>6</sub><sub>5</sub> chord has the third (F#) omitted.
- Bottom set: I - V - II<sub>4</sub><sub>6</sub><sub>3</sub> - I<sub>4</sub> - V<sub>4</sub><sub>7</sub> - I. The II<sub>4</sub><sub>6</sub><sub>3</sub> chord has the root omitted. The I<sub>4</sub> chord has the third (F#) omitted.

The chromatic supertonic triad and seventh chord may, of course, be used in any inversion.

It may appear with the root omitted, and the ninth, eleventh, and thirteenth of the chord may be freely used.

# CHAPTER XXI

## THE NEAPOLITAN SIXTH CHORD

The major triad built upon the lowered second degree of the major or minor key is commonly called the chord of the "Neapolitan sixth". It is called the chord of the sixth because it is most frequently found in the first inversion.



The fact that the fourth degree of the scale is used as the bass note of this chord gives it a very strong subdominant feeling. It is generally followed by dominant or tonic harmony.

The apparent false relation between the lowered and the natural second degree is not objectionable; in fact this is preferable to chromatic movement in a single voice.

A musical example comparing two harmonic progressions. The left side shows a progression starting with II<sub>b3</sub>, followed by V, then I. The right side, labeled "Better", shows a progression starting with II<sub>b3</sub>, followed by V, then I<sub>6</sub>. The bass line is identical in both cases, showing a bass note B-flat followed by A-flat, then D, then C. The top line shows the chords being played. In the "Better" version, the bass note A-flat is sustained through the transition to the I<sub>6</sub> chord.

The third of the chord, being the unaltered tone, is most often doubled.

A musical example showing a harmonic progression. The progression consists of II<sub>b3</sub>, I<sub>6</sub>, V<sub>7</sub>, and I. The bass line shows a bass note B-flat followed by A-flat, then D, then C. The top line shows the chords being played. The I<sub>6</sub> chord has the third (D) doubled. The V<sub>7</sub> chord has the third (G) doubled.

Occasionally this chord is used as a kind of plagal cadence.

A musical staff in G major (one sharp) and common time. It shows five measures. The first measure has a bass note A and a soprano note C. The second measure has a bass note D and a soprano note F-sharp. The third measure has a bass note E and a soprano note G. The fourth measure has a bass note A and a soprano note C. The fifth measure has a bass note D and a soprano note F-sharp. Below the staff, the chords are labeled: II<sub>6</sub>. (in first inversion), V<sub>7</sub>, I, II<sub>6</sub><sub>b3</sub>, and I.

The third of the Neapolitan sixth may remain as the seventh of the dominant chord.

A musical staff in G major (one sharp) and common time. It shows four measures. The first measure has a bass note A and a soprano note C. The second measure has a bass note D and a soprano note F-sharp. The third measure has a bass note E and a soprano note G. The fourth measure has a bass note D and a soprano note F-sharp. Below the staff, the chords are labeled: I, II<sub>6</sub><sub>b3</sub>, V<sub>7</sub>, and I.

Although this chord was originally used almost exclusively in the first inversion, at the end of the nineteenth century it began to be used frequently in root position, the root of the chord being doubled. Now, of course, it may be used in any inversion.

A musical staff in G major (one sharp) and common time. It shows seven measures. The first measure has a bass note A and a soprano note C. The second measure has a bass note D and a soprano note F-sharp. The third measure has a bass note E and a soprano note G. The fourth measure has a bass note A and a soprano note C. The fifth measure has a bass note D and a soprano note F-sharp. The sixth measure has a bass note E and a soprano note G. The seventh measure has a bass note D and a soprano note F-sharp. Below the staff, the chords are labeled: I, bII<sub>6</sub>, I, I<sub>6</sub>, II<sub>6</sub>, I<sub>6</sub>, and V.

Here we are concerned with the Neapolitan sixth as an altered chord within a tonality, but it must be pointed out that it is also very useful in effecting distant modulation.

A musical staff in G major (one sharp) and common time. It shows eight measures. The first measure has a bass note A and a soprano note C. The second measure has a bass note D and a soprano note F-sharp. The third measure has a bass note E and a soprano note G. The fourth measure has a bass note A and a soprano note C. The fifth measure has a bass note D and a soprano note F-sharp. The sixth measure has a bass note E and a soprano note G. The seventh measure has a bass note D and a soprano note F-sharp. The eighth measure has a bass note E and a soprano note G. Below the staff, the chords are labeled: C: I, V, I, II<sub>6</sub>, II<sub>6</sub>, I<sub>6</sub>, V, and I. The key signature changes to D-flat major (two flats) starting from the fourth measure.

## CHAPTER XXII

### THE ALTERED TONIC CHORD

In a previous chapter we mentioned that the chromatic supertonic chord, now used as an altered chord within a tonality, probably had its origin as the dominant of a related key. We may reasonably expect then, that the dominants of other related keys can be incorporated within a tonality as altered chords.

In order to make a modulation from the key of C major to the subdominant key (F major), it is necessary to add a minor seventh ( $B_b$ ) to the C major chord, changing the function of this chord from tonic to dominant.

C: I<sub>6</sub>      V<sub>4</sub>  
               3      I  
 F:      V      V<sub>6</sub>  
               (B5)    I      V<sub>(b)7</sub>      I

This "dominant seventh" chord built upon the tonic note can be used as an altered chord within the key *without* producing a modulation. It must be followed by a chord which "cancels" the altered tone; in this case, the  $B_b$  will be followed by a B natural.

C: I      IV      I<sub>6</sub>/  
               B5      VII  
               4/3      I

It may proceed to a supertonic discord before going to the dominant.

I      IV      I<sub>6</sub>/  
               B5      II<sub>6</sub>/  
               D5      V<sub>b</sub>

The “cancellation” of the  $B\flat$  may take place in another voice; the feeling of false-relation is minimized since both chords are seventh chords.

A musical staff in G major (one sharp) showing five measures. The bass line consists of eighth notes descending from B to A to G. The top voice shows: I (G-B-D-G), IV (G-C-E-G), I<sub>6</sub><sup>5</sup> (G-B-D-G), VII<sub>7</sub> (G-B-D-F), and I (G-B-D-G). A diagonal line connects the B in the IV chord to the B in the VII<sub>7</sub> chord.

The tonic ninth is usable and is subject to the same general restrictions as the seventh chord.

A musical staff in G major (one sharp) showing five measures. The bass line consists of eighth notes descending from B to A to G. The top voice shows: I (G-B-D-G), II<sub>6</sub> (G-A-C-G), I<sub>13</sub><sup>7</sup> (G-B-D-F), VII<sub>13</sub><sub>6</sub> (G-B-D-F), and I<sub>6</sub> (G-B-D-G).

The tonic eleventh occurs infrequently.

The tonic thirteenth chord will most often appear as in the following example.

A musical staff in G major (one sharp) showing five measures. The bass line consists of eighth notes descending from B to A to G. The top voice shows: I (G-B-D-G), V<sub>6</sub><sub>5</sub> (G-B-D-G), I<sub>13</sub><sup>7</sup> (G-B-D-F), V<sub>13</sub><sub>4</sub><sub>2</sub> (G-B-D-F), and I<sub>6</sub> (G-B-D-G).

Other possible chromatic alterations of the tonic chord, such as the raised and lowered fifth or root, will be discussed in following chapters.

It may be well to mention here that the lowering of the third in the tonic chord of a major key (i.e., the minor triad) will *not* be considered in this discussion of altered chords. The common chords of a major key and its tonic minor are interchangeable. These chords may be considered as “borrowed chords” or “substitutions” rather than altered chords.

In either Major or Minor

A musical staff in G major (one sharp) showing two chords. The first chord is G major with a lowered third (B-flat). The second chord is G minor with a raised third (C-sharp).

## CHAPTER XXIII

### THE CHORDS OF THE AUGMENTED SIXTH

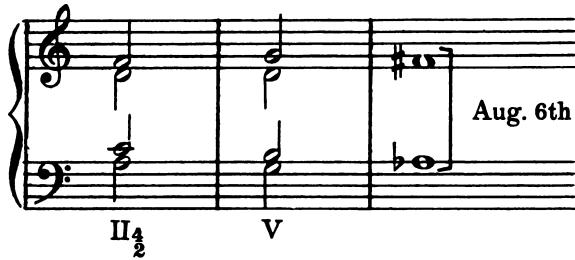
The following example shows a familiar chord progression, which we have already discussed, decorated by a chromatic passing-tone.



As in many other cases, the frequent use of this progression has made possible the substitution of the chromatic passing-tone for the original chord tone.



The progression, without alteration, is the supertonic seventh chord followed by the dominant, but the addition of the two chromatic alterations produces the characteristic interval of the augmented sixth.



1. **RESOLVING TO THE DOMINANT.** This augmented sixth chord appears in several varied forms which are discussed below, but it is *most important* for the student to remember that they are all variations of supertonic (or subdominant) harmony and *function* as an *approach* to the *dominant*. Most often students have difficulty, not in remembering how these chords are constructed, but in remembering *how* they are *used*. The interval of the augmented sixth resolves outward to the *dominant tone* regardless of the disposition of the other two voices.



Three forms of this chord have been used frequently enough to warrant giving them names; these three are given below along with the chords from which they are derived.

Italian 6th	French 6th	German 6th
$\text{IV}_6$	$\text{II}_4 \frac{3}{3}$	$\text{II}_4 \frac{3}{3}$

The resolution of the augmented sixth chord is to dominant harmony, or to dominant harmony decorated by the tonic chord.

(The parallel fifths in the last example below are not considered objectionable as long as they do not occur between the outer voices).

Italian	French
$\text{V}$	$\text{I}_6 \frac{4}{4} \text{ V}$

German	German
$\text{I}_6 \frac{4}{4} \text{ V}$	$\text{V}$

In the works of more recent composers other forms of the augmented sixth chord are used, but they have not as yet been labeled with a universally accepted name. The augmented sixth resolves outward but the inner voices are different. For example:



2. **RESOLVING TO THE TONIC.** So far, we have mentioned the augmented sixth chord only as an approach to the dominant. This is by far the greatest use of the chord, but occasionally it appears on other degrees of the scale, the next most frequent being the augmented sixth chord as an approach to the tonic.

Italian

Musical notation for two staves. The top staff shows a treble clef and a key signature of one sharp (F#). The bottom staff shows a bass clef. The first measure contains a chord with a sharp sign above it, indicating F# major. The second measure shows a resolution to the tonic (I) where both voices move down to notes below the staff.

French

Musical notation for two staves. The top staff shows a treble clef and a key signature of one sharp (F#). The bottom staff shows a bass clef. The first measure contains a chord with a sharp sign above it, indicating F# major. The second measure shows a resolution to the tonic (I) where both voices move down to notes below the staff.

German

Musical notation for two staves. The top staff shows a treble clef and a key signature of one sharp (F#). The bottom staff shows a bass clef. The first measure contains a chord with a sharp sign above it, indicating F# major. The second measure shows a resolution to the tonic (I) where the top voice moves down to a note below the staff and the bass voice moves up to a note above the staff.

As the above examples show, these augmented sixth chords resolve to tonic harmony or to tonic harmony decorated by the subdominant chord.

It must be reiterated that the above augmented sixth chords resolving to the tonic occur *much less frequently* than those that resolve to the dominant.

3. *OTHER USES, INVERSIONS.* One other use of the augmented sixth chord is worthy of mention; it is formed from the subdominant chord with an added sixth (supertonic seventh chord), and resolves to tonic harmony.

A musical staff in G major (one sharp) and common time. It shows a harmonic progression: IV (IV<sub>6</sub>th) followed by a vertical bar, then I, followed by another vertical bar labeled "Aug. 6th". The next vertical bar shows a return to I. The bass line consists of eighth notes. The first vertical bar has a bass note A. The second vertical bar has a bass note C. The third vertical bar has a bass note E. The fourth vertical bar has a bass note C. The staff ends with a double bar line.

IV<sub>6</sub>th  
(II<sub>6</sub>)  
I  
Aug. 6th  
I

The augmented sixth chord, whatever its form or derivation, occurs most frequently with the interval of the augmented sixth between the *outer parts*, but all inversions of the chord are usable.

As we said before, the student will experience some difficulty in knowing *when* and *where* to use these chords in harmonizing a given melody; before going on we will give a few illustrations of soprano parts that may be harmonized by these chords. For the most part, it will be used to harmonize those tones which lie immediately adjacent to the tones in the dominant chord (or in some cases the tonic six-four chord).

Dominant Chord

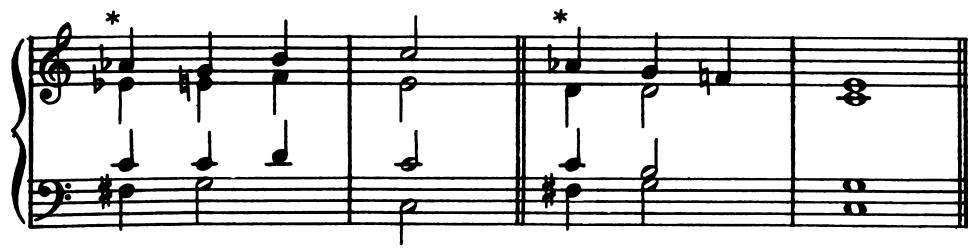
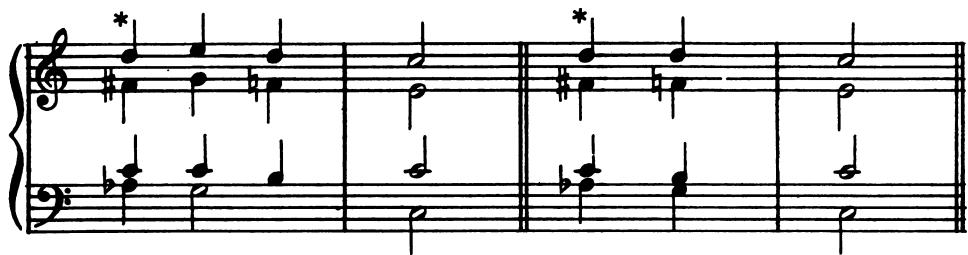
A soprano line in G major (one sharp) and common time. It shows three measures of a dominant chord. The first measure has a bass note D. The second measure has a bass note F. The third measure has a bass note A. The soprano line consists of eighth notes. The first measure starts on E, moves to D, then to F. The second measure starts on G, moves to F, then to A. The third measure starts on C, moves to B, then to A.

Root      Third      Fifth

Tonic Six-Four Chord

A soprano line in G major (one sharp) and common time. It shows three measures of a tonic six-four chord. The first measure has a bass note D. The second measure has a bass note F. The third measure has a bass note A. The soprano line consists of eighth notes. The first measure starts on E, moves to D, then to G. The second measure starts on G, moves to F, then to A. The third measure starts on C, moves to B, then to A.

Fifth      Root      Third



# CHAPTER XXIV

## OTHER CHROMATIC ALTERATIONS

**1. THE RAISED FIFTH.** It is quite common to find major chords (I, IV, V in the major key and III, V, VI in the minor key) with the fifth of the chord raised. This chromatic alteration, of course, increases the tendency of the fifth of the chord to resolve upward, and produces an augmented triad.

In the normal resolution of this augmented triad, the chords following it will be limited to those which contain the tone immediately above the augmented fifth.

I<sup>#5</sup>    IV    I<sup>#5</sup>    II<sub>6</sub>    IV<sup>#5</sup>    VII<sub>6</sub>    IV<sup>#5</sup>    V<sub>7</sub>    V<sup>#5</sup>    I    V<sup>#5</sup>    VI

The addition of the seventh, ninth, etc. does not change the fundamental function of the triad, but only intensifies its need of resolution. Thus, the dominant seventh and ninth chords with the raised fifth have a new sound, but their essential function is not changed by the chromatic alteration.

V<sup>#5</sup><sub>2</sub>    I<sub>6</sub>    V<sub>4</sub><sub>3</sub>    I    V<sup>#5</sup><sub>5</sub>    I

In addition to these normal resolutions of the augmented chords, there are, of course, numerous irregular resolutions, of which the student can find examples. Most of these irregular resolutions come about when the raised fifth is treated enharmonically. We will give examples of them later, when we discuss enharmonic resolutions of chords.

The minor triad with the raised fifth is not used frequently because the ear hears the raised fifth as a minor sixth; however, it is entirely possible as the following example shows.



**2. THE LOWERED FIFTH.** The triad with the chromatically lowered fifth (diminished fifth) most often occurs as a dominant. The lowered fifth resolves downward in the succeeding chord to fulfill its melodic tendency. As in the case of the previous example, this chord may also appear with the seventh and the ninth added.

$V_{b5}$       I       $V_{b5}^7$       I       $V_{b5}^9$        $I_6$

Very rarely the student may encounter chords which contain *both* the raised and the lowered fifth; both altered tones resolve according to their respective tendencies. This sounds very much like an inversion of an augmented sixth chord, but the notation, and hence the resolution, of the chord is entirely different.

$V_{b5}$        $\sharp_5$       I

**3. THE RAISED ROOT.** Many theorists do not like to admit any chromatic alteration of the root of a chord because the root is a kind of "starting point" to which all other chromatic alterations are referred. It is necessary, however, to include two rather frequently used chords which, by their notation, seem to belong here. These are the tonic seventh chord (with raised root and lowered seventh) and the submediant seventh chord (with raised root).



4. **THE LOWERED ROOT.** The lowered root in the tonic major chord (or any major chord) will most often be heard as a leading-tone. In sound, this produces a minor triad in the second inversion. For this reason the lowered root of a major triad is of little practical use.



By lowering the root in a minor triad (II, III and VI), we produce a combination which is entirely usable. In the resolution the chromatic tone, of course, fulfills its natural tendency.

A musical staff in A minor (no sharps or flats) illustrating a harmonic progression. The chords shown are II<sub>b6</sub>, I<sub>b6</sub>, III, V<sub>4</sub><sub>5</sub>, I, VI, I<sub>6</sub><sub>4</sub>, and V<sub>7</sub>. The bass line features a descending scale. The first two measures show a lowered root in the II<sub>b6</sub> chord. The third measure shows a lowered root in the I<sub>b6</sub> chord. The fourth measure shows a lowered root in the V<sub>4</sub><sub>5</sub> chord. The fifth measure shows a lowered root in the I chord. The sixth measure shows a lowered root in the VI chord. The seventh measure shows a lowered root in the I<sub>6</sub><sub>4</sub> chord. The eighth measure shows a lowered root in the V<sub>7</sub> chord.

In the minor key, the minor triads I and IV may be used with the lowered root as a device for modulating to related keys.

A musical staff in A minor (no sharps or flats) illustrating a harmonic progression. The chords shown are II<sub>b6</sub>, I<sub>b6</sub>, III, V<sub>4</sub><sub>5</sub>, I, VI, I<sub>6</sub><sub>4</sub>, and V<sub>7</sub>. The bass line features a descending scale. The first two measures show a lowered root in the II<sub>b6</sub> chord. The third measure shows a lowered root in the I<sub>b6</sub> chord. The fourth measure shows a lowered root in the V<sub>4</sub><sub>5</sub> chord. The fifth measure shows a lowered root in the I chord. The sixth measure shows a lowered root in the VI chord. The seventh measure shows a lowered root in the I<sub>6</sub><sub>4</sub> chord. The eighth measure shows a lowered root in the V<sub>7</sub> chord.

The supertonic triad with lowered root in minor (or with lowered root and fifth in major) has already been discussed as the Neapolitan Sixth chord.

II<sub>b6</sub>

5. **CHROMATIC ALTERATIONS OF THE DOMINANT CHORD.** In mentioning the various chromatic alterations of the triad in the first part of this chapter, we pointed out that the addition of the seventh to the altered dominant triad did not fundamentally change the function of the chord. That is, what was said about the triad with raised fifth is also true of the dominant seventh chord with raised fifth. It may be well, however, to set down the more practical forms of the dominant seventh chord for the student's examination. We will list all of the practical chromatic alterations, even though, in some cases, these tend to destroy the *dominant* function of the chord.

These are not all of the possible forms of the four-note chord, but the list includes those that are the most practical; the student may exhaust the other possibilities later.

To each of these basic four-note chords may be added either a major or a minor ninth to produce a series of five-note chords.

In four part harmony one of the tones in the five-note chord has to be omitted. This is not the same tone in every case, but the omitted tone will in all cases be the *least* essential or *least* characteristic tone.

A musical staff in G clef and common time. It shows a sequence of chords where one note is omitted from a five-note chord. The omitted notes are: the third, the fifth, the seventh, the ninth, and the eleventh. The notes present are the root, second, fourth, sixth, and eighth. The chords are: C major (root), D major (root), E major (root), F major (root), G major (root), A major (root), B major (root), and C major (root).

A musical staff in G clef and common time. It shows a sequence of chords where one note is omitted from a five-note chord. The omitted notes are: the third, the fifth, the seventh, the ninth, and the eleventh. The notes present are the root, second, fourth, sixth, and eighth. The chords are: C major (root), D major (root), E major (root), F major (root), G major (root), A major (root), B major (root), and C major (root).

To the ninth chord may be added the perfect or the augmented eleventh.

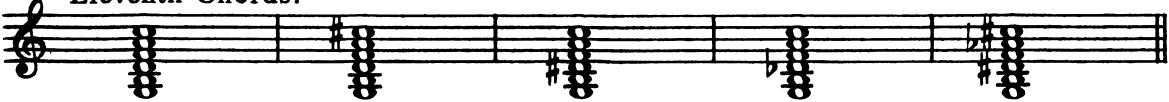
A musical staff in G clef and common time. It shows a ninth chord with an added perfect or augmented eleventh. The notes are: C, E, G, B, and D (perfect eleventh) or C, E, G, B, and E (augmented eleventh). The chord is shown with three vertical stems.

The series of superimposed thirds is completed by the addition of the major or minor thirteenth to the eleventh chord.

A musical staff in G clef and common time. It shows a thirteenth chord. The notes are: C, E, G, B, D, and F (major thirteenth) or C, E, G, B, D, and E (minor thirteenth). The chord is shown with three vertical stems.

The altered forms of the eleventh and thirteenth chords, and to some extent the altered ninth chords, are *not* very effective in *four-part* harmony because the omission of certain tones tends to make the chord lose its identity. Of course, some of the altered forms of these chords are impossible in four parts.

Eleventh Chords:



In four parts:

Thirteenth Chords:



For the most part the altered forms of the dominant ninth, eleventh and thirteenth chords will be used later when the student has occasion to write five- or six-part harmony. Good examples of these chords may be found in the orchestral writings of the French Impressionistic composers, and also in some of their works for piano, but the student must be cautioned that the use of these chords by this group of composers was entirely different from the use and function just described. The French Impressionists treated these and other dissonant chords as if they were consonant and required no resolution. This is a line of reasoning with which the student may experiment later.

There are very few examples of the true dominant ninth, eleventh and thirteenth chords in their altered forms, but they may be found. As a rule, when these chords occur with several tones omitted, they are capable of being interpreted in some other way. In every case the interpretation should coincide with what the *ear hears* rather than with what the *eye sees*.

In the following example the first chord *might* be described as "a dominant thirteenth built on C with an augmented fifth, an augmented eleventh and with the root and third of the chord omitted," but the *ear* will never recognize C as the root of this chord; it is more properly described as an "appoggiatura chord" with the various chord-members resolving by step to the next chord.

# CHAPTER XXV

## SMALL FORMS

The student has now reached the point where the harmonization of given melodies is no longer adequate, nor even desirable; he must begin writing original pieces which utilize the new harmonic devices studied.

In constructing any piece of music, it is, of course, necessary to determine the over-all length of the piece, the number of sections it will contain, the psychological effect of the cadences, the thematic similarity of the separate sections, etc. In the study of *FORM* we will examine those devices of musical construction which have occurred with enough frequency to have become generally accepted principles.

1. *THE PHRASE.* The phrase is usually described as "the smallest complete musical expression." This is a very vague statement but it is generally true; it can best be explained by an example. It is probably better to say that a phrase, when regular, is a melody or chord progression four measures in length. It may begin upon either an accented or an unaccented beat; it usually begins on tonic harmony.

Beethoven



2. *CADENCES.* The end of the phrase is called a cadence. This is an interruption which may be either final or temporary. These cadences correspond to the punctuation used in writing, i.e., the full-cadence is similar to a period at the end of a sentence, both denoting a full stop; the half-cadence is used like a comma, denoting only a momentary pause. The full cadence represents a feeling of rest; the half-cadence, although indicating a pause, maintains a certain amount of tension or unrest, since it is to be followed by something else.

Halt Cadence

Full Cadence

3. **THE PERIOD.** The period consists of two related four-measure phrases; the first phrase ending with a half-cadence, and the second phrase with a full-cadence.



If the two phrases begin as above with similar thematic material, the period is of **PARALLEL CONSTRUCTION**.

If the period is of **OPPOSITE** or **CONTRASTING CONSTRUCTION**, the first phrase is called the **ANTECEDENT** phrase, the second phrase is called the **CONSEQUENT** phrase. In this type of period the relationship of the two phrases is not as obvious as it is in one of parallel construction, but it is absolutely essential for a relationship to exist between the two phrases. The two phrases are often referred to as "question" and "answer," i.e., the second phrase will depend upon, or be consequent to, the material in the first phrase. Quite often the second phrase begins as an inversion of the first phrase. More rarely, the two phrases will have no thematic similarity, but will be related only by the same general style or mood.

Mozart

A musical score by Mozart, featuring two staves of music. The top staff is in treble clef and the bottom staff is in bass clef. Both staves are in common time with one sharp (F# major). The first measure of each staff begins with a quarter note followed by eighth notes. The second measure continues with eighth notes. The third measure starts with a quarter note followed by a dotted half note. The fourth measure concludes with a half note followed by a sharp sign, indicating a half-cadence. The fifth measure begins with a quarter note followed by a dotted half note. The sixth measure continues with eighth notes. The seventh measure starts with a quarter note followed by a dotted half note. The eighth measure concludes with a half note followed by a sharp sign, indicating a full-cadence. Roman numerals are placed below the staff: II<sub>6</sub>, V, V<sub>7</sub>, and I.

Fully as important as the thematic relationships, are the two cadences at the end of the phrases. The end of the first phrase must imply anything but finality, the motion or impetus being carried over to the next phrase. This cadence will almost always be made upon **dominant harmony** of the original key, or, in some cases, upon **tonic harmony** of the **dominant key**. Occasionally, this cadence may be made upon some inversion of the tonic or some other chord in the original key.

The cadence at the end of the second phrase is, of course, a full-cadence in the original key.

Major Key

F: V<sub>1</sub> <sub>6</sub>/<sub>4</sub> <sub>3</sub>      Bb: V<sub>7</sub>      I

Minor Key

Bb: V<sub>7</sub>      I      g: V<sub>7</sub>      I(<sub>h</sub>)

4. **THE DOUBLE-PERIOD.** The two periods forming a double-period bear, substantially, the same relationship to one another as do the two phrases forming a period. If the double-period is of parallel construction, phrases 1 and 3 will be thematically similar; if they are not alike, the double-period will be of opposite or contrasting construction. Sometimes the similarity will be in the endings of the periods, i.e., phrase 4 will be like phrase 2.

The cadences generally follow this pattern:

At the end of phrase 1, a semi-cadence upon dominant harmony (or tonic harmony in an inversion) of the original key.

At the end of phrase 2, if the piece is in major, a semi-final cadence upon the tonic harmony of the dominant key (or the dominant harmony of the original key); if the piece is in minor, a semi-final cadence upon the tonic harmony of the related major key. This cadence is stronger than the one at the end of phrase 1, but it must not be absolutely final.

At the end of phrase 3, a semi-cadence, usually upon the subdominant harmony of the original key.

At the end of phrase 4, a final-cadence in the original key.

# Major Key

Double Period

Period I    Period II

Phrase 1    Phrase 2    Phrase 3    Phrase 4

C: I    IV V    G: V<sub>7</sub> <sub>4/3</sub> I<sub>6</sub>    F: V<sub>b7</sub> I    C: V<sub>7</sub> I

# Minor Key

Double Period

Period I    Period II

Phrase 1    Phrase 2    Phrase 3    Phrase 4

a: I    I V#    C: V<sub>6</sub> <sub>5/3</sub> I    d: VII<sub>7</sub> b7 I    a: V<sub>7</sub> <sub>#</sub> I

5. **IRREGULARITIES.** It is quite common for certain extensions to occur in the small forms; these extensions are usually accomplished by the *repetition* or *sequence* of some part of the phrase or period. It is quite probable that some irregularity or extension will take place in a double-period in order to avoid the too-perfect symmetry of four equal phrases. Four such phrases are too obvious, and their exact similarity produces a rather inartistic result, since the listener is able to anticipate each of the cadences. It is usually better to have one or more of the phrases or periods extended in one of the following ways:

1. **THE EXTENSION AT THE BEGINNING OF A PHRASE.** This is usually accomplished by a measure or so of an accompanying figure which prepares the listener for the entrance of the theme. This extension is usually applied only to the antecedent phrase.

Mendelssohn

etc.

2. *THE EXTENSION DURING THE COURSE OF A PHRASE.* This type of extension can be applied to either the antecedent or the consequent phrase. It is most often accomplished by the repetition or sequence of an important melodic motive.

Musical score by Mendelssohn in G major, 6/8 time. The score consists of two staves: treble and bass. The melody is primarily in the treble staff, featuring eighth-note patterns. The bass staff provides harmonic support with sustained notes and eighth-note chords. A large curved bracket labeled "Extension" covers a section of six measures in the middle of the phrase. The word "Mendelssohn" is written above the score, and "etc." is written below it to the right.

3. *THE EXTENSION AT THE END OF THE PHRASE.* This extension generally occurs in the consequent phrase and consists of making a repetition or sequence of the last important motive or phrase member. Often, this requires evading the final cadence.

Musical score by Mendelssohn in G major, 2/4 time. The score consists of two staves: treble and bass. The melody is in the treble staff. An "Extension" is indicated by a bracket over the final four measures of the phrase, which repeat the rhythmic pattern of the previous measures. The word "Mendelssohn" is written above the score.

4. *THE EXTENSION AT THE BEGINNING OF A DOUBLE-PERIOD.* This is similar to the extension at the beginning of a phrase, except that it is longer and of a more definite introductory character. In fact, the student should consider this extension a short INTRODUCTION TO THE DOUBLE-PERIOD.

Musical score by Mendelssohn in G major, common time. The score consists of two staves: treble and bass. The treble staff begins with a melodic line labeled "Adagio". The bass staff starts with a sustained note. A bracket labeled "Introduction" covers the first four measures of the treble staff, which establish the melodic line before the main period begins. The word "Mendelssohn" is written above the score, and "etc." is written below it to the right.

5. *THE REPETITION OF AN ENTIRE PHRASE.* In a period or a double-period an entire phrase may be repeated either exactly or with some modification. This repetition is most often of the consequent phrase, very rarely of the antecedent phrase.

Mendelssohn

The musical score consists of two staves. The top staff is in 2/4 time with a key signature of one flat. It is divided into two sections: 'Antecedent Phrase' (measures 1-4) and 'Consequent Phrase' (measures 5-8). The bottom staff is also in 2/4 time with one flat. A bracket labeled 'Accompaniment omitted' spans the first four measures. The second section of the consequent phrase begins with a single note followed by eighth-note chords. The third staff, labeled 'Repetition (modified)', shows a continuation of the melody with eighth-note chords, ending with a fermata over a single note.

6. *THE EXTENSION AT THE END OF A DOUBLE-PERIOD.* This is similar to the extension at the end of a phrase, but is somewhat longer. It may be called a CODETTA, and as such, it is the counter-part of the INTRODUCTION.

The musical score consists of two staves. The top staff is in 2/4 time with a key signature of three sharps. It features a series of melodic phrases connected by slurs. The bottom staff is also in 2/4 time with three sharps. A bracket labeled 'Codetta' spans the final section of the piece, which consists of a series of eighth-note chords and grace notes, concluding with a final cadence.

The student should now construct several examples of the phrase, period, and double-period of regular lengths, and then make various alterations and extensions according to the above method.

Here is an example of a melody extended in all of the ways just listed.

The image shows three staves of musical notation in G major (two sharps) and common time. The notation is divided into three main sections by large curved brackets:

- Antecedent phrase:** The first section, spanning the first six measures, is labeled "Antecedent phrase". It features a treble clef on the top staff and a bass clef on the bottom staff. The melody consists of eighth-note patterns. The first measure is labeled "Extension".
- Consequent phrase:** The second section, spanning measures 7 to 11, is labeled "Consequent phrase". It also features a treble clef on the top staff and a bass clef on the bottom staff. The melody continues with eighth-note patterns. The final measure of this section is labeled "Final Cadence Evaded".
- Repeated phrase (modified):** The third section, spanning measures 12 to 16, is labeled "Repeated phrase (modified)". It features a treble clef on the top staff and a bass clef on the bottom staff. The melody repeats the pattern from the antecedent phrase but with modifications. The final measure is labeled "Extension".

# CHAPTER XXVI

## ADVANCED MODULATION

All of the chromatic chords just discussed, have been used within a key, and in a way that produced no modulation. It is also possible to use these chromatic chords to effect a modulation to some other key.

1. **PIVOT-CHORDS, DIATONIC AND CHROMATIC.** In the study of modulation up to this time, the student has concerned himself with modulating to nearly related keys by means of a common-, or pivot-, chord. This pivot-chord is generally used when modulating to a *related* key, whether the modulation be *diatonic* or *chromatic*. It may be well to point out that in a diatonic modulation the movement of each voice will be diatonic (in some key, not necessarily the original key), while in a chromatic modulation, at least one voice, will move chromatically.

The image shows two sets of musical staves. The left set, labeled 'Diatonic', shows a progression from C major (I) through G major (IV) back to C major (I). The right set, labeled 'Chromatic', shows a similar progression but with chromatic alterations in the bass line to effect a modulation. Below the staves are Roman numerals indicating the chords: C: VI<sub>6</sub>, G: II<sub>6</sub>, V<sub>7</sub>, I; C: IV, G: V<sub>7</sub>, I.

However, the term "chromatic modulation" is rather loosely used to refer to any distant modulation which involves quite a few accidentals.

There are four ways in which a pivot-chord may produce a modulation. A chord may be:

1. Approached as a *diatonic* chord in one key, and left as a *diatonic* chord in another key. This is the ordinary modulation with which the student is already familiar.

A single staff of musical notation showing a progression from C major (I) to G major (IV). The bass line features a chromatic alteration (a half sharp) over the IV chord, marked with an asterisk (\*). Below the staff are Roman numerals: C: I<sub>6</sub>, G: IV<sub>6</sub>.

2. Approached as a *diatonic* chord in one key, and left as a *chromatic* chord in another key. In the example given the pivot-chord is approached as the *subdominant* chord of one key, and is left as the *neapolitan-sixth* chord of the new key.

C: IV<sub>6</sub>  
e: II<sub>6</sub>

3. Approached as a *chromatic* chord in one key, and left as a *diatonic* chord in another key. Here, the pivot-chord is a *neapolitan-sixth* in the first key and becomes the *tonic* chord of the new key.

C: II<sub>b6</sub>  
D<sub>b</sub>: I<sub>6</sub><sup>b3</sup>

4. Approached as a *chromatic* chord of one key, and left as a *chromatic* chord in another key. The pivot-chord is approached as a *chromatic supertonic* in the first key, and left as a *chromatic leading-tone* chord in the second key.

Numerous examples should be worked illustrating the four treatments of a pivot-chord just described.

2. *THE COMMON TONE.* In the latter part of the nineteenth century, the principle of modulating by a common chord was extended to include modulation by a common tone. The common tone must connect two chords in different keys, that is, no modulation is made or implied by two chords which are in the same key and connected by a common tone. This chord progression involves chords whose roots lie a third apart. It is sometimes referred to as "the third-relation", and, as a chord progression, was much in favor during the Romantic period.

This progression in itself does not produce a modulation, since the new key is not confirmed, but it offers a new approach to modulation, the confirmation of the key coming later.

The student will see that in every case the two chords, connected by a common tone, are always of the same kind (major or minor).



3. *ENHARMONIC MODULATION.* The term enharmonic is used in referring to two notes that have the same sound, but are written in different ways.



We know that modulation can be produced by approaching a chord in one way, and leaving it in another way. In an enharmonic modulation, the chord, or chord member, is approached as if it were written in one way, and is left as if it were written in a different way. This can best be shown by an example.

The following chord progression is perfectly logical as a V — I progression in E minor. Each of the tones in the first chord fulfills its own melodic tendency; the F $\sharp$  resolves upward to G, the D $\sharp$  resolves upward to E, one B remains as a common tone, the other proceeds to the root of the following chord.



It is, however, possible to write one or all of the voices in the B major chord enharmonically, and to resolve this chord according to the melodic tendencies of the written notes.

Here are a few of the possible resolutions of this simple triad. Notice that the tones in the first chord are written so that they logically proceed to the tones of the resolution; this leads to some rather awkward looking combinations of tones. In practice the first chord would probably be written in the simplest, most convenient way, regardless of its resolution, but in these examples the chord is *written* so as to show the *thinking* process that the composer goes through in arriving at the various resolutions. Of course, to use these enharmonic resolutions and produce a modulation, the composer *approaches the chord as if it were written one way and leaves it as if it were written another.*

To carry this theory of enharmonic resolution into practice, the student must experiment, first at the piano and later on paper, with all the other major and minor triads. This method of thinking may also be applied to the seventh chord and, in some instances, to the ninth chord, although, the effectiveness becomes less as we go farther away from the triad.

Of necessity, this type of modulation will most often lead the student far afield, that is, to keys which are more distant than the so-called related keys. One of its greatest uses, then, will be in transition passages or development sections where a new tonal color can be effectively used as a kind of surprise. The composers of the nineteenth century exploited this kind of resolution or modulation as a means of evading, or adding variety to, the cadences.

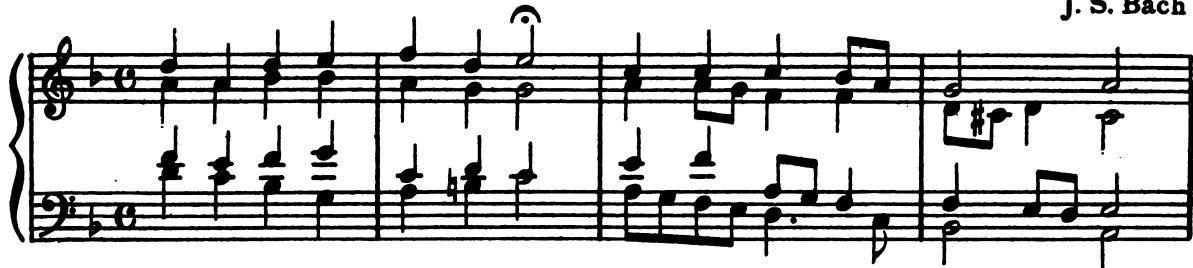
To test the student's ability to apply what we have just discussed, he should be given several more-or-less *diatonic* melodies of a slow, sustained nature. These will be harmonized, using enharmonic modulations at the cadences, or other appropriate places.

# CHAPTER XXVII

## CHORDS OF LONG DURATION, ACCOMPANIMENTS

Up to this time the student has been most concerned with "harmonizing every note," or at least in having his harmonies change with each accent.

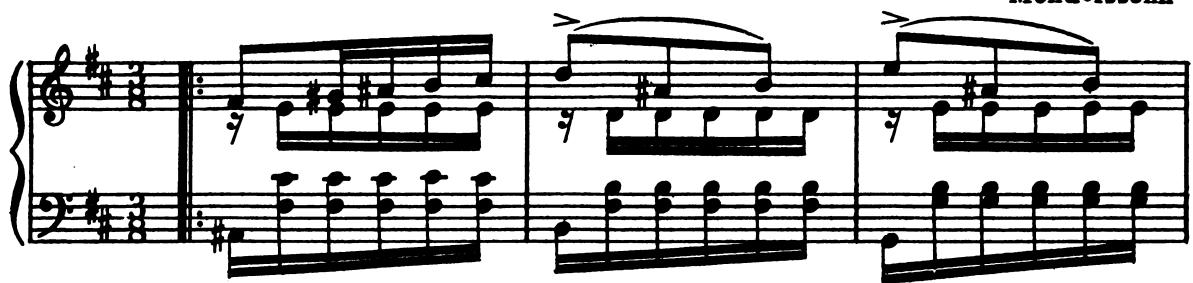
J. S. Bach



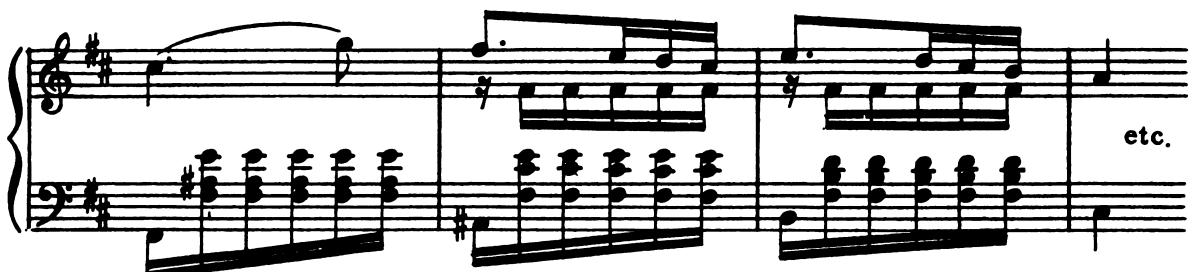
If he is at all observant, he will have noticed that this procedure is seldom followed, except for chorales, hymns, etc. More often, a harmony will be sustained for more than one beat; it may last as long as a measure or for several measures.

The student may well ask how interest is to be sustained over a period of several measures, when there is no harmonic variety. Some variety can be obtained by different positions of the chord, and by unessential decorations, but mainly the interest will be sustained by a rhythmic pattern called an accompaniment. Here is an example in which the same chord is retained for a whole measure.

Mendelssohn



etc.



The harmony may also change every half-measure.

Mendelssohn

A musical score for piano in common time. The key signature changes from C major (no sharps or flats) to G major (one sharp) and back to C major. The melody consists of eighth-note patterns, and the bass line provides harmonic support. Measure 1 starts in C major with a forte dynamic. Measure 2 begins with a half note in G major. Measure 3 returns to C major with a half note. Measure 4 begins with a half note in G major. The score concludes with a repeat sign and the instruction "etc."

As will be seen from the two examples just given, the study of harmony is inexorably bound up with the study of instrumental writing. Most of the student's work done in the past will have been for voices. Now that he knows something of the smaller forms used in composition, he will begin writing for the pianoforte, and later on, for other instruments.

The "Songs Without Words" by Mendelssohn, the Beethoven sonatas, and the smaller piano works (waltzes, mazurkas, nocturnes, preludes, etc.) of Chopin afford many examples of the best pianistic style; these must be studied thoroughly.

We can make certain generalizations about writing for the piano from the study of the above works:

The number of voices may change from measure to measure, depending upon the thickness of the texture desired, or for reasons of dynamics.

Mendelssohn

A musical score for piano in common time. The key signature changes from A minor (no sharps or flats) to E major (two sharps). The score features a variety of textures: measures 1-3 show a single melodic line with eighth-note patterns; measures 4-6 show a dense harmonic texture with sixteenth-note chords; measures 7-9 show a return to a single melodic line; and measures 10-12 show another dense harmonic texture. Measure 10 includes dynamic markings "f" (forte) and "3". The score concludes with a repeat sign and the instruction "etc."

Any voice may be doubled in octaves for the sake of emphasis.

Mendelssohn



Although this kind of writing *seems* to dispense with the rules of four-part harmony, none of those basic rules can be discarded. In the following example, the octave doublings in both the right- and the left-hand parts occur for the sake of volume; the grouping of the notes in the right-hand part is made necessary by the limited reach of the hand. As a general rule, chords written for either hand should not encompass more than an octave.

Mendelssohn



At all times correct part writing *must* be maintained between the *outer* voices. The soprano and bass voices are the ones most easily heard; these must move correctly even though, at times, certain licenses may occur in the inner parts.

When the third of a major triad appears in the bass, it is almost always omitted in the upper parts. In the example below, two such cases are indicated with an asterisk.

Mendelssohn



In a piece that is fairly slow, "thick" chords of many parts may appear, but in a fast piece, these cumbersome, unwieldy chords are omitted in favor of a "lean" texture of fewer parts.

Presto

Mendelssohn

etc.

The student will have noticed that almost all of the nineteenth and twentieth century piano music is homophonic in nature. The contrapuntal idea—that all four voices are equal—is replaced by the idea that one voice—the melody—is all-important, and that the other voices—the accompaniment—are relatively unimportant.

Since the harmony changes at the end of each measure or each half-measure, these accompaniments are, for the most part, rhythmic devices that sustain interest by means of motion. The simplest accompaniment is the *reiterated chord*.

Mendelssohn

etc.

The implied vertical chord may be broken-up and sounded horizontally.

Mendelssohn

etc.

Or, the accompaniment may consist of a single running part of chord-tones interspersed with passing-notes and other decorations.

Mendelssohn

The musical score consists of two staves. The upper staff is in treble clef and has a key signature of one sharp. It shows a continuous line of eighth-note chords, with some notes being sustained across the bar line. The lower staff is in bass clef and also has a key signature of one sharp. It shows a steady eighth-note pattern throughout. The score is labeled "etc." at the end of the page.

The accompaniment may take place over a pedal-point, or a reiterated pedal-figure.

Mendelssohn

The musical score consists of two staves. The upper staff is in treble clef and has a key signature of one sharp. It shows a melody line with various note values. The lower staff is in bass clef and has a key signature of one sharp. It features a prominent bass note that repeats at regular intervals, creating a pedal-point. The score is labeled "etc." at the end of the page.

It may be well to summarize briefly the main points deduced from our examination of these piano pieces:

1. The same harmony may be retained for a half-measure, a measure, or even longer.
2. The number of voices may change from measure to measure.
3. Octave doublings may occur for the sake of emphasis or volume.
4. Correct part writing should exist between outer parts.
5. In a major triad, when the third is in the bass it is usually omitted from the upper parts.
6. A great number of parts may appear in a slow composition, while a fewer number of parts will appear in a fast composition.
7. The melody is important; the accompaniment is relatively unimportant.
8. The accompaniment may be a reiterated chord.
9. The accompaniment may be a broken chord.
10. The accompaniment may be a single contrapuntal line of chord-notes and passing-notes or other decorations.
11. It is quite common to use a pedal-point in the bass, over which chord changes occur.

As exercises, the student should be given chordal melodies which lend themselves to this kind of accompaniment writing. He should also be given a measure or two of a piano piece (both the melody and the accompaniment) which he will continue in the same general style. In all of these exercises he should be, of course, as fully conscious of the form (phrase, period, double-period) as he is of the details in each measure.

After some proficiency has been reached, this work should be continued by having the student write pieces in the smaller forms for a solo instrument with piano accompaniment. These pieces should be for instruments which are available so that the student may have the added interest and incentive of hearing a performance of his work.

# CHAPTER XXVIII

## TABLE OF ALL COMMONLY ACCEPTED CHROMATIC CHORDS

It will be well to make a list of the chromatic chords available in a key so that the student will have a more comprehensive picture of the harmonic resources available.

The chromatic chords which were first assimilated into a key were those which originally existed as dominants of related keys.

When we add to these the chords borrowed from the *tonic minor* key, we have quite an extensive harmonic vocabulary, and one which is adequate for most conventional writing.

### Diatonic Chords



### Diatonic Chords borrowed from Tonic minor



### Dominants of related keys



With the addition of the Neapolitan Sixth chord to the resources just mentioned, we have a major triad on each degree of the chromatic scale, but one.



This major triad, a diminished fifth (or an augmented fourth) away from the tonic, has in the past, been avoided by conventional theorists on the grounds that it altered the dominant tone of the key. The interval of the perfect fifth between the tonic and the dominant notes has always been considered one of the keystones of tonality, and it was felt that any tampering with so basic an interval tended to destroy the tonal feeling. With the advent of chromatic harmony in the latter part of the nineteenth century, this consideration, of course, became absurd. Indeed, the only reason this chord was not included in our original list of dominants of related keys is because the triad on the leading-tone is diminished, and hence, can not be the tonic of a key. If, however, we borrow an F# from the key of the dominant, the triad on the leading-tone can become the tonic of the key of B minor, and it can be preceded by its dominant. This gives us a major triad on each degree of the chromatic scale.

All of the minor triads are not available in our original list of resources; the chords indicated by quarter notes in the following series belong to keys which are very far removed from our original key.



In order to make these chords useable in our original key, we must discover a new principle of operation which will include them; this might be the idea of the "appoggiatura" chord. The following progressions are certainly reasonable:

Simultaneous passing or auxiliary notes in more than one part produce what may be called a "passing" chord.

The inclusion of the "appoggiatura" and "passing" chord to our list of resources, of course, makes possible *any kind* of chord on *any degree* of the chromatic scale. We may have diminished and augmented triads (these, for the most part, have dominant functions) as well as major and minor triads on all degrees of the scale.

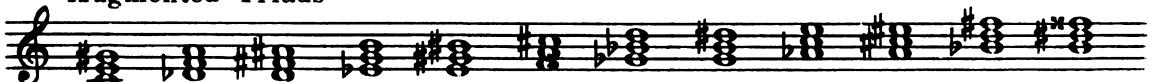
Major Triads



Minor Triads



Augmented Triads



Diminished Triads



Indeed, since this is true, we must include all of the possible seventh chords, and eventually all of the higher dominant discords.



After showing that any harmonic combination is possible on any degree of the scale, it only remains for us to tabulate these according to their probable derivation and most frequent use. In the following table the chromatic triads and dominant seventh chords of the key of C Major are given. It is most important for the student to realize that these chords have a *tonal* significance; that is, that they do not exist independently, but function in relation to the tonic. This series, of course, is to be transposed to all other keys. The higher dominant discords (9th, 11th, 13th) and the altered forms of this dominant chord are all derived from those included in the table.

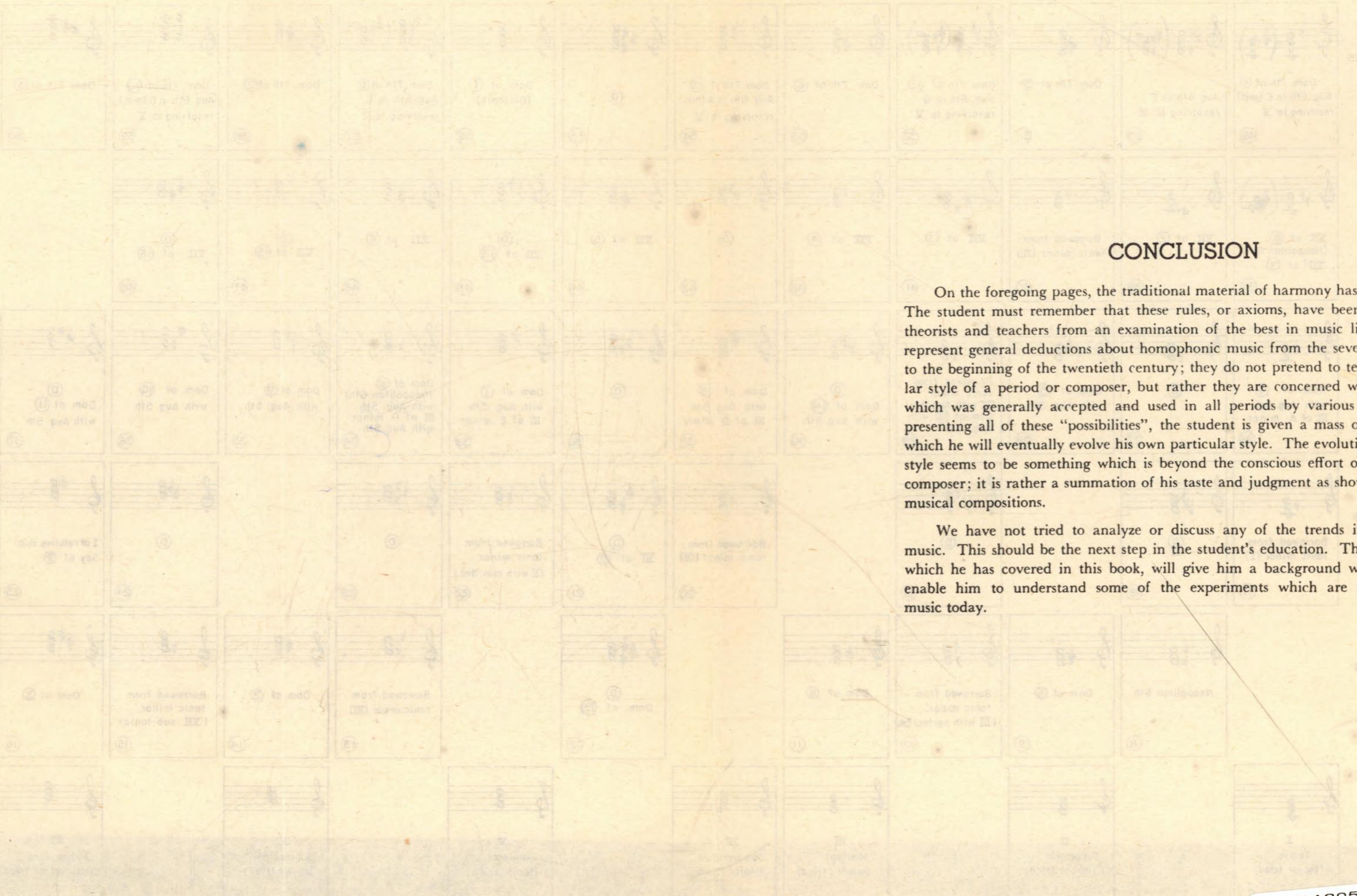
In giving this list of possible harmonic combinations, it may be well to point out to the student that, while these are all possibilities, they are not all of equal importance as far as use and desirability are concerned. In other words, the appropriateness, and hence, effectiveness of these chords is dependent upon their use within a context. The student is no longer faced with the question of what chord is possible in a given case, but rather what chord is the *best* possibility in that case. The question of a chord being *appropriate* rather than just being possible is basically one of taste and judgment; good taste and correct judgment are generally acquired after years of study and experience.



# TABLE SHOWING THE DERIVATION AND FUNCTION OF CHROMATIC CHORDS IN THE KEY OF C MAJOR

<b>CHROMATIC DOM. 7th CHORDS</b>											
 Dom. 7th of ④ Aug. 6th in E (min.) resolving to Ⅴ  ④⁹	 Aug. 6th in F resolving to Ⅴ  ⑤⁰	 Dom. 7th of ⑤  ⑤¹	 Dom. 7th of ⑬ Aug. 6th in G resolving to Ⅴ  ⑫⁵	 Dom. 7th of ⑥  ⑥³	 Dom. 7th of ⑯ Aug. 6th in A (min.) resolving to Ⅴ  ⑯⁴	 ⑭  ⑭⁵	 Dom. of ① (Diatonic)  ①⁶	 Dom. 7th of ⑧ Aug. 6th in C resolving to Ⅴ  ⑧⁷	 Dom. 7th of ②  ②⁸	 Dom. 7th of ⑯ Aug. 6th in D (min.) resolving to Ⅴ  ⑯⁹	 Dom. 7th of ③  ③⁰
<b>CHROMATIC DIM. TRIADS</b>											
 VII of ⑧ (Neopolitan 6th) VII⁷ of ③  ⑧⁸	 VII of ②  ②⁹	 Borrowed from tonic minor (II)  ②¹	 VII of ③  ③⁰	 VII of ④  ④¹	 ⑭  ⑭¹	 VII of ⑤  ⑤⁰	 VII of ⑬  ⑬⁰	 VII of ⑥  ⑥⁰	 VII of ⑮  ⑮⁰	 VII of ⑯  ⑯⁰	 VII of ⑯  ⑯⁰
<b>CHROMATIC AUG. TRIADS</b>											
 Dom. of ④ with Aug. 5th III of A minor  ④²	 ⑭  ⑭²	 Dom. of ⑤ with Aug. 5th  ⑤²	 Borrowed from tonic minor (III with Aug. 5th) Dom. of ⑯ with Aug. 5th  ⑯²	 ⑭ Dom. of ⑯ with Aug. 5th III of D minor  ⑯³	 Dom. of ⑯ with Aug. 5th III of E minor  ⑯³	 ⑭  ⑭³	 Dom. of ⑧ (Neopolitan 6th) with Aug. 5th III of F minor with Aug. 5th  ⑧³	 Dom. of ⑨ with Aug. 5th  ⑨³	 Dom. of ⑩ with Aug. 5th  ⑩³	 Dom. of ⑪ with Aug. 5th  ⑪³	 ⑭  ⑭³
<b>CHROMATIC MINOR TRIADS</b>											
 Borrowed from tonic minor (I)  ①⁷	 ⑭  ⑭⁷	 ⑭  ⑭⁷	 ⑭  ⑭⁷	 Borrowed from tonic minor (IV)  ④⁷	 ⑭ III of ⑨  ⑨⁷	 Borrowed from tonic minor (V with min. 3rd.)  ⑮⁷	 ⑭  ⑭⁷	 ⑭  ⑭⁷	 ⑭  ⑭⁷	 I of relative min. key of ⑨  ⑨⁷	 ⑭  ⑭⁷
<b>CHROMATIC MAJOR TRIADS</b>											
 Neopolitan 6th  ⑧⁷	 Dom. of ⑤  ⑤⁷	 Borrowed from tonic minor (III with perfect 5th)  ⑩⁷	 Dom. of ⑥  ⑥⁷	 ⑭ Dom. of ⑯  ⑯⁷	 Borrowed from tonic minor (VI)  ⑬⁷	 Dom. of ②  ②⁷	 Borrowed from tonic minor (VII sub-tonic)  ⑯⁷	 Dom. of ③  ③⁷			
<b>DIATONIC TRIADS</b>											
 I Tonic (Major triad)  ①⁷	 II Supertonic (minor triad)  ②⁷	 III Mediant (minor triad)  ③⁷	 IV Subdominant (Major triad)  ④⁷	 V Dominant (Major triad)  ⑤⁷	 VI Submediant (minor triad)  ⑥⁷	 VII Leading-tone (Diminished triad)  ⑦⁷					

(D) = Decorative chord — Used as an appoggiatura, or auxiliary chord to some other chord, or as a passing chord.



## CONCLUSION

On the foregoing pages, the traditional material of harmony has been presented. The student must remember that these rules, or axioms, have been formulated by theorists and teachers from an examination of the best in music literature. They represent general deductions about homophonic music from the seventeenth century to the beginning of the twentieth century; they do not pretend to teach the particular style of a period or composer, but rather they are concerned with the material which was generally accepted and used in all periods by various composers. In presenting all of these "possibilities", the student is given a mass of material from which he will eventually evolve his own particular style. The evolution of a personal style seems to be something which is beyond the conscious effort or control of the composer; it is rather a summation of his taste and judgment as shown in a series of musical compositions.

We have not tried to analyze or discuss any of the trends in contemporary music. This should be the next step in the student's education. The basic material which he has covered in this book, will give him a background which will better enable him to understand some of the experiments which are taking place in music today.

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